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ABSTRACT

The following organizations and agencies sent their suggestions and comments on the National Center for Education Statistics (NCES) Elementary/Secondary Education Data Redesign Project: American Association for Counseling and Development, American Association of Colleges for Teacher Education, American Library Association, Indiana University, School of Public Affairs, Association of American Publishers, Association of Teacher Educators, Council of Chief State School Officers, Council of State Governments, Educational Testing Service, Lutheran Church-Missouri Synod, National Center for Research in Vocational Education, National Education Association, National Governors' Association, National School Boards Association, Rural Education Association, State Higher Education Executive Officers, Equal Employment Opportunity Commission, National Science Foundation, and Office of the Assistant Secretary of Defense (Force Management and Personnel). Eleven of the organizations and agencies sent letters and the rest provided their comments in papers prepared by individuals. Topics discussed include research needs and problems; collection of data on different levels and types of education and their relevance, quality and utility; and improvement of the utility of NCES statistics in policy studies. (JAZ)

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ED272574

ELEMENTARY/SECONDARY EDUCATION DATA

REDESIGN PROJECT

Letters, Comments, Reactions

from

Organizations and Agencies

October 1985

TM 860 490

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

American Association for
Counseling and Development
5999 Stevenson Avenue, Alexandria, Virginia 22304 703/823-9800

Serving the counseling, guidance and human development professions since 1952.

June 18, 1985

Mr. Emerson J. Elliott, Administrator
National Center for Education Statistics
Brown Building
1200 19th Street, N.W.
Washington, D.C. 20208

Dear Mr. Elliott:

The American Association for Counseling and Development (formerly the American Personnel and Guidance Association) is pleased to participate in the redesign of the National Center for Education Statistics elementary and secondary education data program. There are some important data collection/research issues that should be addressed in the future to provide invaluable information about learning and the rules and responsibilities of school personnel.

Rather than provide lengthy papers on these issues, we have chosen to raise them in this letter, with some suggestions when possible. We would be pleased to discuss them in more detail with you and to devote staff and reader time to your redesign effort.

Demographic Data

In the past, there have been a number of problems in collecting data on noninstructional personnel. For example, elementary school counselors often serve more than one school, making it possible, perhaps even likely, that the same person is counted more than once. This problem is true of nurses, social workers and others as well. It is essential that the number of noninstructional personnel be reported on a district basis in terms of full-time equivalent units. It would also be valuable to know what the ratio of students to these different personnel is in each district. Because the quality of services provided to students rests upon the caliber of instruction as well as the types and extent of student needs that are met, it is essential to assess accurately the number and types of noninstructional personnel who provide services to students. AACD worked collaboratively with NCES in the preparation of Counselors in Local Education Agencies, Fall 1979 and Trends Since 1970 (NCES 82-122b). We welcome the opportunity to participate in the updating of this research report.

American Association for Counseling and Development is Committed to Equal Opportunity.

Time and Task Analysis

Recent studies on how teachers and students spend their classroom time have not only been instructive in understanding what is happening in the classroom but have led educators to reassess how they spend their time. Similar studies for noninstructional personnel would be invaluable in assessing the types of services provided and the actual needs of students and faculty. Educators at all levels could use this information to:

1. Gain a better understanding of the roles of noninstructional personnel, including (but not limited to) school counselors, psychologists, social workers, nurses, speech and hearing specialists, librarians and media specialists, administrators and supervisors;

2. Assess student needs and the degree to which they are being met by noninstructional personnel;

3. Review and, if necessary, reformulate the roles and responsibilities of noninstructional personnel; and

4. Develop a comprehensive approach based on realities, not perceptions, of the appropriate tasks of all school personnel.

Note: AACD is extremely interested in and willing to assist in any time and task studies directed to the study of the school counselor's role in elementary and secondary education.

Demographic Data on Educational Personnel

Information on education personnel, their ages, years of experiences, training and average length of stay is essential if we are to predict future personnel needs in a more systematic manner. These demographic data need to be correlated with expected student enrollment, based on birth and enrollment statistics, to project future personnel needs. These projections should address the needs at least 5-10 years in advance to encourage/discourage youth and adults from pursuing training as educators. The projected teacher shortage illustrates the importance of such planning. Systematic, accurate information on current personnel and future needs is vital for all education personnel if we are to lessen or prevent personnel shortages or surpluses in the future.

Note: AACD can assist NCES in assessing the status of student enrollment in elementary and secondary counselor education programs. The association is also committed to gaining better supply and demand information for counseling and pupil services personnel.

Career Development

Because the goal of education is not only to produce an educated citizenry but also to prepare future generations to enter the work force, it is essential that we assess students' career development needs, current activities of schools in fostering career development and what might be done to improve this aspect of school preparation. Such an assessment would require an indepth study, but that fact should not be a deterrent to it. The future of our children, our economy and our country is intricately tied to successful employment of future generations.

Need for NCES Advisory Council

We strongly recommend that NCES institute an advisory council composed of educators from diverse instructional and noninstructional backgrounds, as well as experts in assessment, parents and students to provide advice on future survey efforts. This advisory council should be a formalized body, meeting to offer advice and direction to NCES. Diverse instructional and noninstructional personnel should be involved, regardless of the survey's focus, because few, if any, research areas are restricted to only one type of personnel. This advisory council should provide direction and advice and, in some cases, be involved in responding to the survey design, draft items and the method(s) for survey dissemination. Such involvement can help identify problems of overlap, unclear questions, misinterpretation of terminology, gaps and other issues that ultimately reduce the validity and reliability of the data collected.

Note: AACD is willing to identify staff, leader and professional representatives to participate in such an NCES advisory council.

Assessing School Counseling

To support the belief that the Department and AACD should work in conjunction with each other, we have enclosed a list of research questions for assessing school counseling that we submitted in the fall of 1984 to the National Institute of Education as they formulated their priorities for the national center and laboratory competition. While these questions take

a more indepth look at research issues related to school counseling, we think you might find them of value as you address specific questions related to school counseling.

AACD stands ready to assist NCES as the center studies and develops ideas for collecting elementary and secondary education data. We can identify professionals who have the expertise you require as you look broadly at the education services we are currently providing and those we should be providing in the future. We welcome the opportunity to provide additional information or to answer any questions about our suggestions. We wish to be involved in future efforts.

Sincerely yours,

Patrick J. McDonough, Ed.D., NCC
Executive Director

FEB:LH
Enclosure

American Association for Counseling and Development
5999 Stevenson Avenue, Alexandria, Virginia 22304 703/823-9800

Serving the counseling, guidance and human development professions since 1952.

RESEARCH QUESTIONS FOR ASSESSING SCHOOL COUNSELING

1a. A comprehensive accountability study of existing guidance programs is needed. It should:

(a) identify real and implied programmatic goals, measure how they are being accomplished and how successful they are;
(b) assess how counselors spend their time and analyze the costs and benefits of this time use;
(c) survey opinions of various consumers about the quality of counseling services being delivered and their perceived needs for counseling services; and
(d) assess what school counselors do most effectively.

2. What is the impact of counselors' primary prevention efforts? Examples of such programs include career education, relationship enhancement, parent and teacher effectiveness training, peer counseling, assertiveness training, coping skills training and problem solving training.

3. What is known about effective decision-making? Can children/adolescents be taught to be effective decisionmakers? Does such training have an important impact on their lives? What is the most effective way to teach these skills?

4. Can children/adolescents be taught effective problem-solving skills? What are the most effective ways to do so? Are they able to apply these skills to their own lives? Does such training have an important impact on their lives?

5. What is the relationship of temperament style and characteristics to various approaches of counseling, guidance and/or learning? In other words, what kinds of interventions are most successful with what kinds of personalities?

6. What are some qf the problems with cross-cultural counseling and how can they be overcome? What counseling techniques work best with different types of students (e.g., minorities, disadvantaged, etc.)

7. Can counselors make a significant impact on children's/adolescents' achievement through: (a) individual counseling, (b) groups approaches, or (c) consultation with teachers and parents? Which approach is most effective in which situations?

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8. How does the learning environment affect learning and can counselors change the learning environment to be more responsive to students' needs?

9. What is the role of the counselor in identifying children who are at-risk for personal, educational, or career problems? How can teachers and counselors work more effectively with children who have problems?

10. What are the most effective approaches for the counselor in assisting students and their parents with career exploration and selection?

11. What interventions are most effective in working with the following:

- learning disabled
- emotionally disturbed/deprived
- physically handicapped
- children of divorce
- children in step-families
- economically disadvantaged
- substance abuse
- child abuse
- premature or delayed development
- chronic truancy
- underachievement
- social immaturity

For further information, please contact Dr. Frank Burtnett or Dr. Sharon Alexander at AACD.

Comments for the

National Center for Education Statistics

Redesign of the Elementary and Secondary Education Data Program

June 14, 1985

From the

American Association of Colleges for Teacher Education

Prepared by

Elizabeth A. Ashburn, AACTE Director of Research and Information Services

Edward Ducharme, Chair, Organizational Counseling and Foundations Studies, University of Vermont; Member, AACTE Task Force on Research and Information

Kenneth Howey, Associate Dean and Professor, College of Education, University of Minnesota; Member, AACTE Task Force on Research and Information

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Sam J. Yarger, Dean, School of Education, University of Wisconsin-Milwaukee; Chair, AACTE Task Force on Research and Information

Nancy L. Zimpher, Professor, The Ohio State University; Member, AACTE Task Force on Research and Information

AACTE gathers data about higher education-based teacher education; consequently AACTE does not consider itself expert in the area of data collection concerning elementary or secondary education. Our membership has been involved, however, with a variety of data collection vehicles sponsored by the National Center for Education Statistics. On the basis of this involvement and the Association's data-collection efforts in another sector, the following comments and observations are offered.

General Areas of Data Needs

In examining the documents distributed by NCES in this call for comment, and taking into consideration some long-term data needs of the teacher education community, we have identified four areas which should have a high priority for NCES:

- o Teacher supply and demand. With increasing competition for scarce resources at both the preservice teacher education and inservice levels, it becomes imperative to have accurate current information on and future projections of teacher supply and demand. Such scarce resources need to be distributed so that teacher education programs can be responsive to the school personnel needs of local districts. Information on the teacher reserve pool (its size, mobility, and interest in returning to teaching), the retirement picture for the current workforce, accurate attrition figures, and "lateral entry" forecasts are needed both short-term and long-term.

- o Beginning teacher induction programs and inservice education. Data about programs in these areas are critical because they have implications for future program development. Estimates as to growth (or lack thereof) of inservice and beginning teacher induction programs for teachers will allow teacher educators to prepare intelligently to assist school districts with the continuing education of teachers.

- Data about teacher testing programs. To a large degree, the credibility of teacher preparation institutions is on the line with teacher tests. Despite the perceived inadequacies of the current tests, the quality of schools, colleges and departments of education is likely to be judged based on a variety of competency tests. If support for rigorous and demanding tests can be demonstrated, a "professional school mentality" may start to develop. In other professions, e.g., accounting and law, it is normal for 30, 40, or even 50% of the applicants to not pass the test on the first attempt; despite these passage rates, the training institutions are rarely blamed. The relationship in those circumstances is between the testing agency and the prospective professional. Typically, the training institution will offer programs to help students who are having trouble passing those tests prepare to do better on the next try. A similar attitude with respect to the teaching profession is necessary and desirable. The more information that can be obtained on teacher testing programs, the better teacher education programs will be able to prepare to meet the needs of teachers in this regard.

- Continuity of data gathering. We emphasize strongly that most of our recommendations for data-gathering will have little consequence if data are not gathered on a continuing and systematic basis over long periods of time. Frequently, what is needed is trend data, not individual data for a given year, since of overwhelming concern to the education community is continuing quality and meeting future education needs with present teacher preparation.

Sources of Data

NCES gathers and organizes data in three principal ways, according to Attachment B of the information provided in your request to us. First, a variety of data-gathering arrangements are in place in state education agencies. Second, the Center sponsors

voluntary response to sample surveys conducted by mail. Finally, NCES gathers data collected by other federal agencies. We have two general comments about these approaches to data collection.

Voluntary Mail Surveys. Our observation of and experience with data collection in schools of education causes some concern regarding voluntary response to sample surveys by mail. We assume, for example, that some, if not all, of the data concerning teacher supply are gathered from the complex questionnaires that are sent to selected registrars in colleges and universities around the country. Typically, these are passed on to deans of education for response. Unfortunately, many of the items requesting specific information require a response that is often too detailed and too complex for the respondent. Consequently, the questionnaires may be discarded, or more significantly, estimates may be fabricated for the purpose of appearing to be in compliance with the request. Therefore, we conclude that, given our experience, much of the data are suspect.

We recommend that NCES develop a data-gathering strategy that brings the Center into closer and more intimate contact with the potential respondent through reliance on professional associations. Recognizing that this strategy can be very costly, it would be more acceptable to allow a higher margin of error than to leave questions of accuracy unanswered. Within the constraint of scarce resources, the Center should focus on the selection of a smaller sample and take the steps necessary to enlist institutional support and involvement with the data-gathering strategy. More than likely, this would require personal contact by either a contractor or Center staff, but we believe that such contact is necessary in order to ensure the necessary respondent involvement. Even though the error margin might be larger than the ideal, the representativeness of the data is likely to be more powerful.

Collaboration. The document "Indicators of Education Status and Trends" (January 1985) lists the variety of other federal agencies and departments with which the Center works in the development of data-gathering strategies. Such efforts are to be applauded, since the richness of the information is undoubtedly enhanced by it. There was no mention, however, about collaboration with and use of data and information from the broad variety of non-federal sources. In the area of elementary and secondary education, for example, such organizations as the National Education Association, the American Federation of Teachers, the Council of Chief State School Officers, the National Association of Secondary School Principals, and the American Association of School Administrators, as well as others, are continually gathering information about their enterprises. We recommend that the Center initiate long-term collaborative relationships with these groups that would allow for an outlet for the important data which they collect, and also ultimately an increasing standardization of data that are collected by them. With the professional expertise and the broad-based access to data needs that NCES possesses, it could be helpful in aiding organizations to focus their limited data-gathering strategies. This influence would lead to a richer national data pool that would provide practitioners with more, and more accurate, information, and would also help reduce the number of problems that are encountered when one set of data appears to be contradicting another set. We offer no master plan concerning how these long-term collaborative relationships might evolve, but we remain convinced that such efforts would be worthwhile.

Obviously, the same idea concerning collaborative relationships can and should apply to the gathering of data beyond the elementary and secondary education program. These types of relationships could also be developed in the areas of post-secondary education, vocational education, and education of a variety of special programs and populations that are of interest to NCES and to America's educators.

Current NCES Data-Gathering Efforts

Three aspects of the current elementary and secondary program of particular concern to teacher education are discussed below in detail. With respect to the State Aggregate Fiscal Report and the Public School Survey, we believe that additional useful information could be obtained via these instruments than is currently being collected. With respect to the Survey of Teacher Demand and Shortage, a revised data-collection methodology is suggested.

State Aggregate Fiscal Report. NCES is committed to gathering state aggregate fiscal data concerning current expenditures by major function. Suggested examples are instruction, support services, and non-instructional services; it is unclear whether there are more categories than those. A category system should be added that allows data to be gathered concerning the state aggregate commitment to teacher education. This could include expenditures for inservice education, beginning teacher induction programs, and support for intern teachers as well as preservice teacher education. There is precedent for public school monies being used to support all of these classifications.

Public School Survey. It is important for the education community to know about the nature of teacher training beyond preservice teacher education. Do teachers take college courses as the primary strategy for inservice education? Do they enroll primarily in district-sponsored inservice education? Do they enroll primarily in inservice provided by their teacher organization or by other professional organizations? Are there more informal types of inservice training that teachers use? In addition, perhaps through the data provided by the districts, it would be helpful to find out the amount of money devoted by districts to inservice education as a proportion of their total budget. It is important to know the types of structures that school districts

organize in order to provide additional training for teachers. With the current thrust toward helping beginning teachers adjust to the classroom, it is important to start gathering data about the fiscal support for new teachers (induction programs). Finally, it would be very helpful if the Center could develop strategies for gathering data concerning the nature and frequency of relationships that local school districts have with institutions of higher education, focusing on inservice education.

Survey of Teacher Demand and Shortage. With regard to the strategy for obtaining information on teacher demand and shortage, we reiterate the invocation for the more intensive sampling notion we presented earlier. In the current plan, 3540 educational institutions, 2540 LEAs, and 1000 private schools are asked to provide information on the number of budgeted teaching positions, number of vancancies, etc. We have two concerns about this strategy. First, when over 7000 different people are asked to provide this kind of information, the return rate must be questioned, i.e., how many people do, in fact, respond to these surveys? Second, the completeness and accuracy of the information provided is of concern. When questionnaires come across a respondent's desk, typically from sources toward which no affiliation is felt, the tendency is to complete them as quickly as possible, often with little regard for the thoroughness and accuracy of the information provided. How does the Center ensure these data are representative? Requesting the same information from a much smaller sample via personal contact, such as a phone interview, would allow surveyors to quiz people and make judgments as to how well prepared the respondent is to deal with the question.

Other Data-Gathering Efforts

Data needs that do not appear to be adequately met by the current elementary and secondary program are described below. Teacher supply, teacher competency, and teacher career patterns are all areas where NCES could be an invaluable source of detailed data.

Teacher Supply. While no reference was found in these materials to teacher supply, and while it may be that the "supply" focus is part of the postsecondary program, it is important to mention it here. Currently, teacher supply estimates are typically made from data provided by institutions of higher education. More accurate sources of teacher supply data are state education departments: the number of teachers certified and/or licensed, the number of emergency or provisional certificates granted, the number of applications that were not granted for one reason or another, and the number of requests from school superintendents for special consideration in employing education professionals. State education department licensure figures, gathered over time, will provide trend lines on teacher supply that are much more usable than the data provided by IHEs. The reason for this is that many teacher education program graduates have no immediate goal of becoming classroom teachers, i.e., a remarkably constant number go on to graduate school, choose to stay out of the job market for reasons of marriage or family, or find alternate employment that is more appealing to them at that moment than teaching. Another confounding phenomenon is that the number of education degrees awarded does not equal the number of students newly certified to teach. Secondary education teacher candidates, for example, may have a degree in their subject area major rather than in education, and prior graduates can return for postgraduate work to obtain a teaching certificate. Thus, the number of undergraduate degrees awarded from a school, college, or department of education gives only that--an estimate of the number of people who have undergraduate education degrees; this number may be quite different, across states and across institutions, from the number of those who are actually available to teach. We recommend that NCES take an active role in collecting data about teacher supply at the state level.

Teacher Testing. NCES has a significant role to play in gathering data about the rapidly growing teacher testing movement in American education. It is important for the education community to know which tests are used and the frequency of their use.

Although not necessarily NCES's responsibility, there should be data provided concerning the validity and reliability of these tests. To the extent possible, aggregate scores by region, type of teacher, etc., should be made available. Data are needed concerning the relationship of teacher testing scores to job placement. It is also important to discover the level of discrimination that tests promote, i.e., do all teachers who take the test end up passing it or are some actually barred entrance to the profession? We recommend that NCES develop data-gathering strategies to address questions of the impact of teacher testing, in such areas as the competence of beginning and re-entry teachers, recruitment and retention of minority teachers, and the overall quality of education. Although some of these questions may go beyond the mission of NCES, we believe it is important that the questions be considered as an important context for development of longitudinal data collection efforts.

Certification and Licensure. More information is needed about certification and licensure requirements in the states. It is very difficult, at the current time, to know whether a license or certificate in one state has any relationship to that offered in another state. Reciprocity is decreasing, partly because of differences in testing programs among the various states and partly because of growing skepticism about program approval and program quality. More intensive analyses are needed of what stands behind certification and licensure requirements both across and within the various states.

We recommend that NCES play a significant role in gathering data to increase our understanding of the process of certification and licensure, a process which greatly affects the country's supply of teachers. Cooperation with the National Association of State Directors of Teacher Education and Certification could produce a ready supply of such data.

Beginning Teachers. Specific information from first- and perhaps second-year teachers over a ten-year period would be very useful for planning purposes. Knowledge about their route of entry--traditional preservice program, alternate program, lateral entry, and the type of certificate held--would be enormously helpful to policy makers. The type of support available to them as they began their teaching careers and information concerning experiences encountered in searching for a first teaching job are specific questions of concern: How many districts did they apply to? How many interviews did they receive? How many job offers did they receive? How far away from their home or college did they have to go to find a position? How far away from their first choice did they have to go? The recent spate of literature concerning the importance of the first two years of teaching to a teacher's career adds validity to these questions.

Teacher Development. By virtue of the current line of thought that teachers go through a variety of developmental phases, we recommend that the National Center for Education Statistics gather demographic, inservice education, and other data from teachers within the framework of their years of service. Such longitudinal data would help to answer important questions about degree of teacher retention, reasons for leaving teaching, reasons for remaining in teaching, development of professional competence, and impact of state and federal education initiatives in this area.

Career Ladders/Lattices. Information about career options within the teaching ranks for teachers is important, given the strong movement in elementary and secondary school systems to provide more variety and reward in teachers' work. Typically, these are referred to as career ladders or career lattices. The education community needs to know what is being done across states and what is the impact of these programs on teacher satisfaction, teacher retention, and the development of teacher competence.

Teacher Retention. The question of teacher retention has awakened considerable interest over the last five years. Although it may be possible, in a post hoc manner, to analyze some of the data gathered by NCES on this topic, it is crucial to insure that we have accurate answers to such questions as: How long do teachers stay in the teaching ranks? What are the reasons that prompt them to leave? What proportion of teachers opt or will opt for early retirement programs? What number leave and return at later stages of their lives? We recommend that NCES make this a focus for the data collection program.

Early Retirement. Another specific category of teacher demand data that would be useful concerns the prevalence of early retirement systems in schools and estimates of what proportion of teachers are taking advantage of early retirement programs. A retirement age of 65 can no longer be assumed; many states and school districts are providing incentives for people to retire early and the large number of "baby boom" era teachers are reaching an early retirement age. There would be significant benefits from estimates of future vacancies as well as from the data that the Center obtains concerning real current vacancies. This kind of information would enhance the ability of teacher educators to make long-term program development decisions.

Comment on "The Sorry State of Education Statistics" by Cooke, Ginsburg, and Smith

Cooke, Ginsburg and Smith state that education statistics as collected and published in the U.S. today are inadequate, inconsistent, incomparable, and sometimes just plain wrong. They advocate a set of "indicators" which would standardize definitions, collection parameters, and interpretations across state lines. While this is a neat theoretical solution, there are serious problems when it comes to application.

It appears that the authors are highlighting a problem that is not necessarily related to "bad" data collection, but to uncoordinated and non-structured data collection. Frequently, those who wish to make points using data from a variety of sources are not sufficiently careful to document the shortcomings of the information and, just as frequently, they misinterpret the data by being insufficiently specific about the definitions. In one example, the New Jersey and Virginia vocational education enrollment problem cited in the paper is obviously a case where the count is of headcounts of students in classes, not number of people enrolled in vocational education. If that is made clear, the data make sense, though they might not be helpful. In another example, the problem presented by the authors in understanding dropout rates appears to be a situation where the term "dropout" was probably defined differently by the census gatherers and by the school people. The authors point out reasons why people might intentionally falsify data, and that might be true, but the differences are more likely related to lack of definitional consistency.

Cooke, Ginsburg and Smith propose common definitions of indicators across states. We would agree with that, but only to the extent that that would allow either a state or NCES to have a standard by which to compare state data. Thus, when a state chooses to gather data in a different way, or chooses to gather very limited amounts of data, the statement could be made, "Their data do not fit these indicators, thus we cannot use them." In that way Secretary Bell's chart would have omitted the states of Wisconsin, Iowa, and perhaps others, because so few children took the SAT or the ACT in those states.

The paper points out that we're a very independent and autonomous country and we gather data in a variety of different ways. What the authors seem to be asking for is some system that will standardize the way terms are defined and data are collected. AACTE would submit that that is close to the collaborative relationship we have

suggested. It would be unrealistic, however, as well as inappropriate, to suggest that everyone collect data in a form determined by NCES. Rather, it is likely that there will have to be careful separation of data with definitions different from those which the Center can certify as being standard and comparable. It would also be helpful for the Center to offer a data-gathering methodology critique service where they will read over any state's (or other entity's) plan for gathering information and offer advice about improvement. This strategy would be even more helpful if the Center could provide resources to help states formulate better data-gathering methods.

Summary

The following statements summarize our recommendations for the NCES ten-year plan for data-gathering from the elementary and secondary education sectors:

1. The priority data needs of the teacher education community are for information in four areas: (1) teacher supply and demand; (2) beginning teacher induction programs and inservice education; (3) teacher testing; and (4) continuity of data-gathering.

2. Collaborative relationships need to be established with professional associations and other groups with knowledge about the population being studied, and these relationships should be ongoing.

3. Current NCES data-gathering efforts should be broadened to include the areas of financial commitment to teacher education and the nature of inservice education.

4. The research design of very large samples should be modified to insure completeness and accuracy of responses.

5. Data should be collected on a continuing and systematic basis over long periods of time.

6. Additional categories for data collection should include: (1) teacher supply data at the state level; (2) the impact of teacher testing on recruitment, retention, and educational quality; (3) the nature of certification and licensure; (4) the experience of beginning teachers; (5) teacher development via analysis by years of service; (6) the prevalence and nature of career ladders; (7) teacher retention; and (8) early retirement.

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October 3, 1985

Emerson Elliott,
Administrator
National Center for Education Statistics
1200 19th Street, N.W.
Washington, DC. 20208-1401

Dear Emerson Elliott:

Please forgive ALA for not responding earlier to your letter of May 17, 1985 addressed to Robert Wedgeworth. Mr. Wedgeworth left ALA in August to become Dean of the College of Library Science at Columbia University. During the last few months a number of important things were neglected, your letter among them. We sincerely regret that ALA has not taken part in the redesign of the NCES data collection program for elementary and secondary education.

As you know ALA has been working actively with NCES to improve the collection and publication of statistics about libraries. Our Office for Research completed a contract for NCES in November, 1984 with a report entitled "Analysis of Library Data Collection and Development of Plans for the Future." This report recommended revisions in the forms used to collect statistics from College and University Libraries and from School Library Media Centers. We have been pleased to learn that both of those forms are being used this fall in much needed surveys. Robert Wedgeworth, ALA Executive Director, and Jo An Segal, Executive Director of ALA's Association of College and Research Libraries sent a letter to the directors of all college and university libraries urging them to complete the form promptly and completely. ALA's American Association of School Librarians is eager to see the results of the Fall 1985 Survey of School Library Media Centers as the data will be extremely useful to the committee engaged in drafting revised standards for school library media centers. Finally, the ALA Office for Research has just begun work on a contract, funded jointly by NCES and the Division of Library Programs, to conduct a pilot study leading to a cooperative system for public library data collection based on annual data collection by the fifty states.

As you can see ALA is very involved in the NCES data collection efforts which relate to libraries. School library statistics are of special concern to us because there is almost no other source of information on this topic. The OFR report noted earlier documents the fact that although some information about the other library types is available from states and other organizations, this is not true for school library statistics. We are very pleased that NCES is surveying school library media centers in Fall, 1985. The latest available

data was collected in 1978 and is no longer useful. We believe that statistics about school libraries should be an important part of any elementary and secondary school data collection effort. Data should be collected regularly on this topic and included in the compilations which describe other data collected on education--the Digest of Education Statistics and/or the Condition of Education.

We hope these ideas can be incorporated into your plan even though we have missed your deadlines. If there is anything ALA can do at this late date to provide additional information please contact us through Dr. Mary Jo Lynch, Director of the ALA Office for Research.

Sincerely yours

Roger N Parent

Roger Parent,
Acting Executive Director

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EDUCATIONAL STATISTICS FOR STUDIES OF POLICY AND ADMINISTRATION

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an invited paper prepared for the redesign of the elementary and secondary education data program of the United States Department of Education, National Center for Education Statistics

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Education Statistics for Studies of Policy and Administration

I. Introduction

The observations contained in this paper arise from the study Financing Indiana's Public Schools done in 1984 for the Indiana General Assembly[1]. The study used data from the National Center for Education Statistics (NCES) to compare Indiana with other states in the areas of resources committed to education and in educational performance. The difficulties that arose in making these comparisons and the reactions of the supporters and critics of the study are reported here. The remainder of the paper addresses some specific problems concerning NCES statistics and practices and presents some recommendations for improving them.

II. Utility of NCES Statistics for Policy Studies

A central question facing most states today concerns the adequacy of their public education system, both in the areas of the resources committed to education and the performance of the system. Indiana is no exception in this regard. Having experienced severe economic hardships in many parts of the state, Indiana in recent years has taken a closer look at its public schools with the intent both to improve quality and also to make the state more competitive in its ability to attract industry and retain its workforce.

Financing Indiana's Public Schools was designed to review Indiana's position among the states and report on the effects of property tax reform, undertaken in 1973, on its 304 school districts. NCES statistics played a central role in accomplishing the first purpose[2], and statistical information .pn2 from the Indiana Department of Education provided the basis for district by district comparisons of the effects of tax reform. The discussion in this section is confined to the role that NCES statistical information played in the Indiana report.

The principal NCES measures used in the report fell into two categories: (a) measures of input (resources) and (b) measures of output (performance). The report reviewed the availability of education statistics that both measured, in some general way, one of these two concepts and also provided state by state comparisons. Most measures reported in NCES publications did not meet these two requirements, particularly the latter one.

The measures eventually used in the study to compare Indiana to other states are as follows:

Input Measures

Average days attended per pupil enrolled, 1975-76
Number of pupils per teacher, 1980-81
Number of pupils per teacher based on enrollment, 1980-81
Total expenditures per pupil
Total public school expenditures as a percent of personal income

Output Measures

Median years of education
Percent graduating from high school
Average SAT score (for 22 states)

Some of these measures were not ideally suited for the task. The output measures often were criticized as being too vague and not reflecting performance. In particular, the lack of suitable measures of achievement and other aspects of educational performance limited the effectiveness of the study.

Among the input measures Total Expenditures per Pupil received the most attention. A series was constructed from data provided in tables reported in issues of the Digest of Education Statistics to show trends in national and state expenditures. This analysis received considerable comment from General Assembly members, the media, and various interest groups. Those critical of the conclusions of the study--that Indiana was substantially behind other states in levels of spending for public education and was falling further behind--argued that the NCES data were unreliable and were not uniformly reported by the states. The critics thus concluded that Indiana was, in fact, better off than what the NCES statistics indicated, and the conclusions of the study must therefore be discounted. These and other issues in the use of NCES statistics for making policy recommendations are discussed in more detail in the next sections.

III. Improving the Utility of NCES Statistics in Policy Studies

Performance Measures: One conclusion reached in doing the report for the General Assembly is that there are few good measures suited for policy and administration studies. One can divide policy and administration measures into three categories: input or resource measures, process or administration measures, and outcome or performance measures. Although some measures reported in the Digest of Education Statistics may be suitable to use for one of these three purposes, most fail on other accounts discussed below.

The area where most attention is needed is on the performance side. The question most asked by Indiana General Assembly members was about the effects obtained from various programs and expenditures. How can one know that if spending is raised, or class size reduced,

that the schools will produce a better educational product? The three output measures used in the Indiana policy study were poorly suited to evaluate the performance of the Indiana educational system as a whole, and thus anecdotal information received as much credibility at times as national statistics.

Less Aggregation: The current measures of education (input, process, or output) are not very useful because of their present level of aggregation. National averages and other statistics do not reveal much about the state education systems. Since education is primarily a local and state function, it is essential to disaggregate the information to state and district levels. Without this detail NCES data will have only limited utility for policy studies within states. Yet it is the states who will determine the direction and scope of education policy and not the federal government. Without this detail NCES data will have only limited utility for policy studies among or within states.

Comparability: It should be possible to obtain uniform information about every school district in the nation. Since most states including Indiana have their own departments for recording state and district level education statistics, one may argue that the state is the proper place to maintain such detail. If the states are to become the repository of state and district information, then the measures reported by the states and NCES must be the same. In the course of the Indiana school finance study, it was not possible to construct district-level measures of "national" statistics even though the information had come from Indiana. For example, the measure Total Expenditures per Pupil reported by NCES was not available by district in Indiana.

Lack of Documentation: There appears to be no technical publication reporting NCES operational definitions, technical terms, standards, practices, and quality control. Early in the Indiana school finance study, a reference librarian at Indiana University attempted to obtain such a document without success. Subsequent calls to NCES and a conversation with a staff member revealed that no such publication presently exists. The lack of such documentation makes it impossible to provide information about the interpretation of the statistical information. Furthermore, it compromises the conclusions reached by analysts using NCES data, because critics often use anecdotal or hearsay information to refute conclusions. For example, critics of the Indiana study charged that Indiana's average expenditure figure was "too low" because book fees, paid for in Indiana by parents and not by tax monies, were not included in the Indiana statistic. This observation could never be verified or refuted.

Media for Reporting: The eight NCES measures used in the Indiana study came from the following sources: key punching of selected tabular information from various issues of the Digest of Education Statistics, and key punching of a table reported in USA Today from the January 6, 1984, news conference by Secretary of Education Terrell Bell. The latter source was subsequently verified six months later by obtaining a copy of the press release prepared by the Department.

Several comments are in order regarding the means by which this statistical information was obtained. First, statistical series, such as total expenditures per student, should be identified as such and reported as a series. Presently, finding comparable tables in various issues of the Digest appears to be the only direct method of identifying series. Second, data should be available through other media than press reports and publications. The data released to the media during the Bell press conference should have been available on floppy diskette, computer tape, and other such media. In general, Digest issues should appear on computer tape in a manner similar to that used by the Bureau of the Census to report its County-City Data Book information. With the advent of the professional computer, data should be readily available on floppy diskette as well as on public-use tapes.

As a case in point, the Indiana Department of Education provided its entire 10-year database for 304 school districts on computer tape in Statistical Analysis System (SAS) file format. Such assistance greatly facilitated the access to information and the analysis of the issues.

In the next section suggestions are presented for the improvement and/or expansion of educational statistics. This list is not designed to be comprehensive but rather reflects the accumulated experiences and opinions of the author.

IV. Some Specific Suggestions Concerning Education Statistics

Bureau of the Census Data: The Bureau of the Census presently provides data on population and housing characteristics by school district. This series is a important source of information and should be continued. Two observations pertain to the Indiana public-use tape. First, the release of data should occur sooner. Secondly, the accuracy of the data needs to be verified. In the latter situation, the Indiana public-use tape contained numerous errors, including omission of districts and the combination of similar-named districts, and thus was unusable for the study.

Public Opinion toward Education: Several polling organizations such as the Gallup Poll have conducted surveys of public attitudes toward education issues. Such surveys should be continued and coordinated through NCES. Specifically, a standard national survey of opinion should be conducted through NCES at least annually and a series of standard indicators developed. In addition, NCES should have a research program whereby specific questions may be added to the core survey to measure current issues. For example, the impact of private schools such as the "Christian academies" on public schools could be explored. The survey data should be available in a timely manner on public-use tape or similar medium. Competitive research solicitations should be offered to select the principal investigator for each year's special subject.

Survey of School Personnel: No doubt one of the least documented areas of education is the state of the education personnel system, the teacher and administrative workforce. One reads about "burn-out", victimization, and disillusionment among teachers and administrators, but NCES provides little in the way to document these reports. An annual survey of school personnel, including at least teachers and administrators, is needed to measure the conditions in the workforce. Some topics to be included in the survey are measures of "burnout", perceptions of working conditions, reports on use of summer time, expectations about the future, crime and victimization in the workplace, out-of-pocket expenses incurred by faculty, and uncompensated job-related duties.

Labor Relations Information: NCES needs to report on the state of labor relations in the nation's schools. It should provide information on such labor-related characteristics as the degree and type of professional bargaining units, the number and duration of strikes, and the time to settlement of contract negotions. These data should be available on a district by district basis. One question that might be ultimately answered from such data is the relationship between labor relations (timely, amicable settlement vs. strife-ridden negotions) and performance.

Health and Nutrition: Many people believe that the nutritional behavior of students, both before school and in the school cafeteria, is related to discipline and other performance issues in the classroom. School cafeterias vary greatly in the degree to which they offer nutritionally balanced meals as contrasted to ones high in carbohydrates and "empty calories". Some teachers have observed what they believe to be "carbohydrate highs" that may cause behavior problems in afternoon classes.

NCES, possibly in cooperation with the Department of Health and Human Services, should develop a series of studies to determine the nutritional value of meals offered in school cafeterias and consumed by most students. In addition, the nutritional education and behavior of students should be explored, including breakfast-eating behavior, knowledge of nutritional issues, and choices make in the cafeteria, and this behavior should be related to educational performance and behavior.

Class Size and Teacher Load Information: The current measures of average class size reported in the Digest of Education Statistics do not provide sufficient detail to be of much use. The averages reported for Indiana, for example, in no way reflect the personal experiences of this author or those of teachers he has consulted. One general argument made locally is that special education classes skew the class size distribution and distort the mean, thus giving the impression of smaller than actual class sizes. NCES needs to develop information on the variation in class size by distict, subject, and grade. An example of class size data is given in Table 1. Other statistical information such as the median class size for each subject and percentile information should be developed from such data.

TABLE 1

Example of Class Size Table

School District: ABC School Corporation
Grade: 7

Size of Class:	18	19	20	21	...	Median
Subject						
English						
Mathematics						
Reading						
Science						
Social Studies						

table entries are number of classes of a given size for each subject

TABLE 2

Example of Teacher Class Load Measure

School District: ABC School Corporation
Level: Middle School

Number of Students:	120-129	130-139	140-49	...	Median
Subject					
English					
Mathematics					
Reading					
Science					
Social Studies					

teachers who teach part-time or more than one subject should be pro-rated on an FTE basis

A related measure that should be developed is Teacher Class Load. This is a measure of how many students a teacher in a given subject instructs each school day. Such data should be available by district and subject. An example of such data is given in Table 2. The development of the above information should be done for core subjects initially and then expanded to include the entire cirriculum.

Measures of Performance: As indicated in the first section of this paper, NCES does not report sufficient measures of performance. The general question of what kinds of measures to be collected should be explored with various public interest groups, policy makers, and education professionals. Undoubtedly, some measures of achievement in basic subjects are required, but the measures should not be confined to achievement measures. The selection of measures to be included in NCES reporting should be done by a public process reflecting the contributions of many diverse groups. Whatever measures are selected should be reported at least annually by state and district. Without such information the nation's policy makers cannot effectively evaluate the nation's schools and develop programs to remedy deficiencies.

Comparable Expenditure and Revenue Data: The lack of comparability between states poses serious problems for understanding that nature of school expenditures and revenues. Although sufficient detail exists within Indiana for its 304 school districts, attempting to compare Indiana's practices to other states is extremely difficult or impossible. NCES should take the lead in developing a model state data base and reporting system for district level data. Although such data may be collected and maintained at the state level, standard format public-use tapes from each state should be available.

Expenditure and revenue measures should be the core indicators of such a system but other measures such as enrollment and performance measures should be considered as well. The separate states may take responsibility for collecting and reporting the information, whereas NCES may report statistics of primarily national interest.

V. Some Concluding Observations

The present condition of NCES statistics severely limits their utility for policy and administration studies. Although this paper has suggested several areas where improvement is desirable, it should be noted that some recommendations have special priority. The principal areas for improvement should concentrate on developing more useful measures of education performance; producing less aggregation of information by providing state and district level information; and finally instituting better documentation, quality control, and distribution of the product. These enhancements, more than any other, should improve the condition of national education statistics.

Footnotes

1 Robert G. Lehnen and Carlyn E. Johnson, Financing Indiana's Public Schools: An Analysis of the Past and Recommendations for the Future. Indianapolis, IN: Indiana University, School of Public and Environmental Affairs (1984), 160 pages.

2 See "Chapter 4: Achieving Quality Education in Indiana: What Level of Funding Is Required?" in Lehnen and Johnson, op. cit.

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School Division

June 20, 1985

Mr. Emerson J. Elliott
Administrator
National Center for Education Statistics
400 Maryland Ave. SW
Washington, D.C. 20202

Dear Mr. Elliott:

Thank you for your letter to Mr. Townsend Hoopes, President of the Association of American Publishers, inviting our industry to make suggestions for the planned NCES redesign of its elementary and secondary data program. The AAP views this as an exciting opportunity and has asked our Research Committee to respond.

At the June meeting of our committee, we agreed to do this in stages: (a) by filing with you, by June 21, 1985, a written list of suggested changes in NCES data collections for your published reports; (b) informal discussion of these suggestions with staff members of NCES during our committee's planned visit to your offices on August 1, 1985; and (c) if it appears warranted, to follow these steps with further written communication by September 30, 1985, and/or participation in public hearings, as mentioned in your letter to Mr. Hoopes. The following is our committee's list of suggestions:

1. Estimates of secondary school course enrollments are needed much more frequently. By this we mean the type data NCES has supplied Summary of Offerings and Enrollments in Public Secondary Schools, 1972-73 (NCES 76-150), Course Offerings, Enrollments, and Curriculum Practices in Public Secondary Schools, 1972-73 (NCES 77-153), and A Trend Study of High School Offerings and Enrollments: 1972-73 and 1981-82 (NCES 84-224). This is a critical data need. Such market-size estimates comprise one of the most vital factors by which educational publishers decide whether to publish and how to publish instructional materials. Such data every 10 years is clearly not frequent enough. Dramatic changes occur in a decade. Elhi publishers need such data every 2 years. We submit that sufficiently reliable data can be collected through probability samples at a reasonable expenditure by the Government. Enrollment data should cover Grades 7-8 as well as Grades 9-12. Reasonably reliable sub-sample estimates should show enrollment variations for (a) course duration (full-year, one semester, etc.), (b) geographic distribution (state by state, or perhaps by the nine census regions), and (c) public vs. private schools. The raw numbers of students enrolled in each course, plus their percent of all students in all grades, are the key data needed.

2. Estimates every two years of elementary school enrollments for each of the major course areas are likewise a critical need. This should cover Grades K-6, especially if you account for Grades 7-8 enrollment components of K-8 curricula under Item #1 above. Experts presume that 100% of students are enrolled in Reading and Mathematics in Grades K-6. However, as we know, there is considerable variation, especially in the lower grades (as well as in Grades 7-8), in the proportions of students enrolled, at each grade level, in other course areas such as: English/ Language Arts, Spelling, Handwriting, Science, Health, Social Studies, Computer Sciences, Music, Art, Foreign Language, etc. Yet there is currently no central data collection pinpointing the sizeable variations believed to exist in the percents of students, grade by grade, who take these subjects. This is a serious data gap. The same data specifications (especially concerning the duration and/or frequency with which such courses are taught) -- and the same supporting arguments -- outlined in Item #1 above apply here.

3. Grade by grade projections of total enrollments (of all students in all courses) for each level K-12 are a similar vital and frequent need for long-range planning by publishers. Data should be organized like Table 6 in the NCES volume, Projections of Education Statistics to 1990-91, an important annual document. Past data (from Table 22 in the NCES annual Digest of Education Statistics, another important document) should extend back 10 years, and projected estimates should extend 10 years into the future. Such projections could be delivered in both of two frequencies:

   (a) Annually: Grade by grade, K-12, for nationwide total enrollments, as well as sub-sample breaks for (1) the nine census regions and (2) public vs. private schools.

   (b) Every 2-3 years: Grade by grade, K-12, for nationwide total enrollments, as well as sub-sample breaks for state by state.

4. The number of units required for high school graduation in each of the various course areas, state by state, are important data -- needed annually.

5. The specific courses (and their duration) mandated in high schools, state by state, are similarly important data -- needed annually.

Our Research Committee, Mr. Elliott, respectfully submits that the above key data needs will enhance decision-making on a broad basis throughout the education community. More prudent decisions by publishers, large and small, as represented by the AAP, lead to a better choice of more competitive and suitable instructional materials for all school systems.

Please let either me or Ms. Barbara L. Meyers, Assistant Director, School Division, AAP, at its headquarters in New York know whether it will be convenient for our Research Committee to discuss these and perhaps other issues with you and NCES staff members at our scheduled meeting in your offices August 1 (as arranged by her and Ms. Kay McKinney of NIE).

Sincerely,

Berry L. Reece
Chairman, Research Committee
School Division, AAP

cc: Ms. Barbara L. Meyers, AAP
Mr. Donald Ecklund, AAP

THE ASSOCIATION OF TEACHER EDUCATORS

THE IDENTIFICATION OF DATA NEEDED TO SUPPORT DELIBERATIONS ON POLICY ISSUES

Submitted to the National Center for Education Statistics for consideration in the redesign of its elementary and secondary education data program.

Prepared by Dr. Lee Bartolini

The Association of Teacher Educators, as an organization concerned about the improvement of elementary and secondary education, is keenly interested in the National Center for Education Statistics' plan to redesign a 10 year program for elementary and secondary data collection. The organization is primarily interested, however, in data collection activities which will focus on the needs of teachers and teacher educators. In recent years, a flood of national and state reports have identified the need to improve the quality of teaching as a major educational issue. Data collection activities designed to provide the information regarding this issue would be most beneficial to decision and policy-makers.

Some institutions, primarily state education agencies, have tried to identify and collect data needed to improve the quality of teaching and teachers. These efforts have included, but have not been restricted to, the components of teacher training programs. Additional information useful to decision-makers includes local district recruitment, selection, and evaluation procedures, and statewide teacher supply and demand statistics. These subjects are areas in which new data will be especially useful to decision-makers for elementary and secondary programs.

The Council of Chief State School Officers (CCSSO) is also interested in knowing what states are doing to improve the quality of teaching. A committee of CCSSO on Teacher Education and School/College Collaboration recently initiated a 50-state survey which attempts to identify those activities which have occurred or will occur relevant to four policy areas: attracting persons to the teaching profession, preparing persons for teaching, licensing persons for the teaching profession, and retaining teachers. The CCSSO survey also includes a component on teacher supply and demand. The policy areas identified by the CCSSO and the state education agencies provide a framework for identifying data needs.

The NCES plan to redesign its data collection activities focuses upon elementary and secondary education. However, as suggested above, some data identified may be available from or through state education agencies or regional levels of government. NCES may want to consider these sources when planning data collection activities. Another consideration is that teacher education, historically, has been a state concern. Therefore, national data would be most useful if it could be generalized to specific states.

Much information needed to make decisions regarding teaching is available only through colleges and universities. Information on the recruitment and selection of potential teacher candidates by institutions of higher education, information regarding the components of teacher education programs, and information concerning requirements for satisfactory completion of teacher preparation programs are examples of data needs which greatly affect elementary and secondary education, but which must be obtained through institutions of higher education. NCES also needs to consider this source in its data collection plan.

Specific types of data relevant to the improvement of teaching in local schools are outlined in the following sections. Consistent with the scope of the NCES plan to redesign its data collection activities, the data needs identified focus primarily, but not exclusively, on elementary and secondary education. Data have been identified by posing a series of questions. These questions have previously been raised by policy-makers and serve as guidelines for identifying specific data which need to be obtained through data collection activities.

A SAMPLE OF
QUESTIONS TO BE USED TO IDENTIFY
DATA NEEDED TO SUPPORT DELIBERATIONS ON POLICY ISSUES

I. Teacher Supply and Demand. Teacher demand is usually defined in terms of needed staff in specific subject areas within individual states. Colleges and universities, however, prepare teachers not only for the states where they are located, but for the rest of the nation as well.

A. What is the supply and demand balance for teachers by state, by region, and by specific subject area?

B. In what states or regions is demand expected to increase? Decrease?

C. How difficult is it for teachers prepared in one state to move to another state where need might be greater?

1. What certification requirements are common to most states?

2. What core of certification standards and qualifications would enable persons preparing to teach to meet most state requirements?

3. How common are reciprocal agreements between states which would allow persons prepared in one state to teach in another?

D. Can non-teacher experts (persons not prepared as teachers but recognized as experts in subject matter areas) be used as classroom teachers? What are the restrictions or limitations?

II. Recruitment of Prospective Candidates into the Teaching Profession. Much has been said about the increased opportunities for women in the field of business and other professions, thus removing them as potential teacher candidates. There is also concern that the teaching profession does not attract the best and brightest students.

A. Why do persons choose or not choose to become teachers?

B. What local working conditions, salaries, or social conditions would make teaching more attractive to prospective candidates?

C. What problems are associated with recruiting staff for extracurricular activities?

III. Recruitment and Selection of Teachers by Local Districts. Local districts may use a number of techniques to recruit and/or select teachers. While some criteria are well established, such as a satisfactory academic record, little is known about the variety of criteria or degree of difference in the use of specific criteria. In addition, little is known of the factors which limit or constrain recruitment and selection practices.

A. What procedures are used by districts to recruit teachers? What techniques have been particularly useful in identifying and recruiting quality candidates?

B. What do local districts do when qualified candidates cannot be recruited?

C. What practices are employed to recruit minority candidates, in addition to routine recruitment practices?

D. What factors most constrain recruitment of qualified personnel in local districts?

E. Are district selection procedures clear and well defined?

1. Do districts have fully developed job descriptions?

2. What qualifications are required of all candidates?

3. Do district qualifications for positions exceed minimum state requirements?

4. Does the district (or state) require candidates to take qualifying tests? What tests?

5. Who are the personnel who actively participate in the selection of educational personnel?

6. What are the most important criteria used in the selection of teacher candidates?

7. What does a district look for during an interview with a candidate?

8. Does the district assess a candidate's writing skills or abilities?

9. Do districts routinely select applicants who are certified to teach in more than one area?

IV. Evaluation and Performance of Teachers. Evaluation practices implemented in local districts may have an important effect on the quality of education. More needs to be known about how staff evaluations are conducted and what practices, if any, are employed in staff development. There is also concern that budget restrictions and declining enrollments have caused school administrators to assign tenured staff to teach in fields for which they lack sufficient preparation.

A. Do districts employ formal evaluation procedures when assessing the performance of teachers?

1. Are standardized evaluation instruments used?

2. What specific criteria are used to evaluate staff?

3. How often are staff evaluated?

B. Who, in local districts, evaluate teachers? What special training is required of these personnel?

C. If an evaluation indicates that a staff member's performance is unsatisfactory, what subsequent action is taken?

D. What programs for staff development currently exist in local schools?

E. What restrictions or constraints hinder staff development or the improvement of performance?

F. What relationship exists between performance on standardized teaching tests and performance in the classroom?

G. What evidence is there to suggest that persons, either because of insufficient formal training or because of a long absence from a given teaching field, are being asked to teach classes for which they are inappropriately prepared?

V. Retaining Teachers. Major concerns of those interested in improving the quality of education are retaining the best and brightest practicing teachers and removing the incompetent teacher. Conventional wisdom suggests that many of the best teachers leave the profession for positions in private industry. Yet, little is known about those who leave.

A. What is the attrition rate of teachers? Is teacher turnover greater or less than turnover of personnel in other professions?

B. Are those who leave the teaching profession the most qualified teachers? The better performing teachers?

C. Why do practicing teachers leave the profession? If they leave, do they ever return?

D. What working conditions or approaches (e.g. merit pay, differentiated staffing, etc.) would act as incentives for keeping the best teachers in the classroom?

1. What are the factors that provide the most job satisfaction for teachers?

2. What are the factors that create the most dissatisfaction for teachers?

E. What are the constraints associated with retaining the most competent teachers?

F. What are the constraints associated with removing the incompetent teacher?

COMMENTS

OF THE

COUNCIL OF CHIEF STATE SCHOOL OFFICERS

ON THE

NATIONAL CENTER FOR EDUCATION STATISTICS

REDESIGN

OF THE

ELEMENTARY AND SECONDARY EDUCATION DATA PROGRAM

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The Council of Chief State School Officers is pleased to have the opportunity to comment on the National Center for Education Statistics ten year plan for elementary and secondary data collection. The Council is a non-profit organization comprised of the state superintendents and commissioners of education in the fifty states, six extra-state jurisdictions and the District of Columbia. They are the executives responsible for administering the nation's public education enterprise consisting of approximately 85,000 schools with approximately 40,000,000 students and an annual expenditure exceeding $119,000,000,000.00. When combined with postsecondary and continuing education, this enterprise requires 37.8% of state government expenditures, 42.1% of local government expenditures, and combined with federal contributions (4.1% of federal expenditures) total expenditures for education rank second only to National Defense and International Relations in terms of expenditures from all levels of government.

It is natural, then, that the stewardship of this enterprise demands complete and accurate information for accountability to the public and legislative bodies, for the support of effective decision-making, and for the assessment of educational progress. As a result, the Chief State School Officers as collectors, processors, responders, and users of education statistics are in a unique position to provide insight into the implications of plans, changes and needs for data and information about education.

The Council believes that the National Center for Education Statistics has a vital role in responding to educational needs in the following general areas:

1. Contextual Parameters or descriptors that describe the educational enterprise
2. Indicators of the health or status of education and its relationship to other countries
3. Special longitudinal and other statistical surveys and systems that are practical only at the national or federal level
4. Assistance to state and local agencies in the design and operation of activities at the state and local level.

An effective combination of these four areas will result in increased opportunity for new information to be generated by the Center, researchers using Center data, and by policymakers analyzing effect and impact of change.

It is important to point out at the onset that the degree to which these four responsibilities can be appropriately met is highly dependent upon the level of funding for the various activities. The Council at is November 1984 meeting stated that the U.S. Department of Education should "Request increased appropriations for assessment and evaluation efforts by five to six times the current level (8+ million per year) to make the capability comparable with national reporting in health, agriculture and other federal statistical functions. "A failure to accept the cost of producing, reporting, and analyzing statistical information, and the subsequent provision of funds to support this cost, will limit any real advance to piece-meal efforts with neglible improvements."

1. Contextual Parameters or Descriptions

Although a great deal of attention has recently been focused on the combination of data elements to assist in policy analysis, there will always be a need for basic education data. How many districts, schools, students, teachers, administrators, etc. are there? How much money is being spent? Data that define the size and the scope of the enterprise are essential and will continue to be needed by users.

The Council and its Committee on Evaluation and Information Systems (CEIS) has had a long and consistent history of supporting the concept and implementation of a Common Core of Data that describes the system statistically. The philosophy of a federal-state cooperative data system to respond to federal data needs from state and local administrative records is one that has been pursued since 1961. The necessity of maintaining a cooperative approach is critical to the continued and enhanced ability of the federal government to collect either voluntary or contracted data on a systematic basis. Consequently, we applaud the National Center for its approach in soliciting input from a broad variety of audiences on a formal basis. We encourage the involvement of CCSSO and its Committee on Evaluation and Information Systems at each stage of this process.

CCSSO encourages the Center to cooperatively define those data elements that can be efficiently collected with universe information that will improve sample selection procedures without unduly increasing

reporting burdens. This would include data on the school district universe and the school universe.

Standardization and coordination of data definitions at the federal level is a role that may be appropriate for NCES. This coordination, and the attendant acceptance of the development and distribution of glossaries, is necessary to promote the improved comparability of information. Additionally, the acceptance of this role would increase the confidence of data users that information in given formats would be available over time and not subject to changing program emphasis or approaches.

The Council will gladly assist, through its CEIS as well as in other appropriate ways, in the identification of useful, necessary, or improved CCD data elements as well as suggesting elimination of those that have proven to be of little value.

The Council looks to NCES as a provider of information relative to non-public schools as a basis for analyzing total educational information. Additionally, the establishment of comparable statistics about education in other countries would be most useful as states analyze their own data sets.

Finally, the provision of current information is a goal that NCES should constantly be striving to improve. The CCSSO recognizes the problems in collecting data and its impact on the delay in publishing

information but is convinced that a rapid turnaround of information is essential for improved services. The recently established bulletin board is a positive step in this direction but electronic display of old information is holding out only half a promise for improvement.

2. Indicators.

The Council fully endorses the Condition of Education and the Indicators of Education Status and Trends and encourages continued cooperative development in conversion of statistical data into information that is useful in describing the effects of the schooling process. Appropriate statistics that are not part of the Common Core of Data should be gathered by NCES from other sources or through special surveys or procedures using sampling whenever possible. Analysis of the design of these special surveys or activities should consider the possibility of state use and in addition to the national requirements. The aggregation of data about education collected by other federal agencies (such as those reported in the Condition of Education and the Indicators) into a common, accessible data base such as the newly created bulletin board, could be of considerable value to the states as data users.

3. Special longitudinal and other statistical surveys and systems that are practical only at the national and federal level.

The Council is fully supportive of the NCES High School and Beyond Survey and the planned National Education Longitudinal Survey of 1988.

The activities have proven to be extremely helpful in generating a variety of new information on courses, attitudes, relationships, and results. As stated earlier we would encourage consideration of developing these activities in a way that results in state representative as well as nationally representative data. It is recognized that this introduces additional cost for these activities but CCSSO looks to NCES to serve as the state's advocate in soliciting necessary funding to accomplish this.

4. Assistance to State and Local Agencies

A review of effective statistical and information systems clearly indicates that successful programs are dependent upon the capability of respondents to provide accurate information. Accurate and reliable information at the federal level is possible in direct proportion and relationship to the development and improvement of support systems at the state and local level. This concept is embodied in the federal-state cooperative data collection systems which have involved direct federal financial assistance to states for the development of their systems. Such cooperative systems have become operational in the Department of Labor, Bureau of the Census, Law Enforcement Assistance Administration, and the Department of Agriculture. Other specific examples of such systems incude the Coopeative Health Statistics Systems and the Medicaid Management Information System.

In education, however, assistance activities have had an uneven history and have been a woefully underfunded. As resources from all

levels become more scarce the competition for these limited funds by all aspects of general program administration will make it more difficult to develop improved data systems. Information and statistics are not a natural by-product produced at no cost; but rather a commodity which must be produced by someone and paid for by some agency. The CCSSO encourages NCES to seek sufficient resources to permit all levels of government to have resources to generate the data that the Federal Government needs to report timely, accurate and comprehensive statistics. If the resources are not made available, inadequate reporting results or funds and efforts must be diverted from more important activities related to program administration or instruction. Neither of those alternatives is acceptable.

As indicated earlier, the Council would be most happy to assist in the detailed development of specific data items that make up the component parts of the ten-year plan in a more thorough manner. The need to analyze use of data collected, as well as the cost of data to provide are questions that need a great deal of attention and assistance from state and local providers and are as important as the definition of data elements. A federal data system that is not useful or practical to the state and local education agencies providing information will not succeed. Effective dialogue, coordination and assistance will allow an enhanced opportunity for all partners to access and use valid, reliable and timely statistics.

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of Education

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WAYNE TEAGUE
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CAROLYN WARNER
Arizona Superintendent
of Public Instruction

Executive Director
WILLIAM F. PIERCE

CHIEF STATE SCHOOL OFFICERS • COUNCIL • CCSSO

July 19, 1985

Mr. Leslie Silverman
Deputy Assistant Administrator
Division of Statistical Services
National Center for Education
Statistics
U.S. Department of Education
1200 Nineteenth Street, N.W.
Washington, D.C. 20208-1401

Dear Leslie:

At our July 16, 1985 meeting of the CCSSO Ad Hoc Committee on the NCES Elementary-Secondary Data Program Redesign Project, it became apparent that the direction and limits of the project would be impacted by the perceived mission and functional boundaries assumed for the National Center for Education Statistics. We strongly urge that the function be a true statistical center that assumes the major responsibility for coordination of the collection, assembly, analysis and dissemination for that sector of society under its purview, namely education.

The Secretary of Education would be required to make a clear and committed designation that the Center would have responsibility for coordination of statistical data collection and analysis activities across the Department of Education regardless of organizational lines and/or bureaucracies. This assignment would also require that the Center be charged with promoting the integration of the numerous data collection activities conducted by other federal agencies (Department of Agriculture, Bureau of the Census, Department of Labor, et al.) and related private agencies (National Education Association, American Council on Education, and the testing industry) to minimize burden on respondents and to develop increased standardization of terminology.

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This coordination role would include: 1) first and foremost, the coordination of the various activities currently under development in NCES (e.g., CED, VEDS, NELS-88); 2) expansion of the system to include those other data collection activities by the Department of Education (e.g., Special Education, Chapter I of ECIA, Chapter II of the Math and Science Act); and finally 3) establishment of out-reach activities to other agencies to ensure appropriate federal and national coordination. Included in this function would be defining a common set of data elements across the spectrum, coordinating collection of all statistical data, developing efficient collection and dissemination systems (in conjunction with users and providers), seeking out current needs for educational information, and providing assistance, both technical and financial, to the respondees and users of educational data.

Any effort at a ten-year plan, without a clear understanding of the agency's mission and philosophy, offers little promise of success. Additionally, in our view, the failure to expand the mission and functional boundaries of the National Center to a true center for education statistics limits the potential growth to little more than that capacity which exists today.

Sincerely,

George Rush

George Rush
Staff, Council of Chief State
School Officers

GR:fkc

cc: Emerson Elliott

President
GORDON M. AMBACH
New York Commissioner
of Education

President-Elect
FRANKLIN B. WALTER
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September 20, 1985

Emerson Elliott
Administrator
National Center for Education Statistics
1200 19th Street, N.W. #606D
Washington, D.C. 20208

Dear Emerson:

The Council of Chief State School Officers's Ad Hoc panel on the NCES Elementary/Secondary Education Redesign Project appreciates the opportunity you have afforded the task force to provide input into this important review and planning process. The recent heightened interest in educational statistics and information for program reform, system accountability, policymaking and applied research suggests the need for an accurate, timely and comprehensive data base of statistics aggregated in a manner that does not place an undue burden on current local and state information systems. We are encouraged that NCES has initiated such a thorough review and look forward to assisting the Center formulate alternative approaches to address this need.

The Ad Hoc panel met on September 10th to review a draft of the "Synthesis of Invited Papers" and to consider future steps in the redesign project. This meeting resulted in the following general recommendations.

1. The Center should develop a clear mission statement, along with an organizing theory for the integration of administrative record systems, sample surveys and longitudinal activities. The statement should address the Center's role in approving, coordinating, aggregating, maintaining and reporting information collected about education from other units of the Department of Education and other Federal agencies.

2. The regional public hearings, which the Ad Hoc Committee supports as an effective means for fully involving many participants in the process of providing and using educational data, should be scheduled for the first quarter of 1986 rather than the last quarter of 1985. The delay would be justified by the time required to fully involve all parties impacted by these

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proceedings and supply them with appropriate information in advance, including drafts of the plan.

3. NCES should consider state representative samples on all NCES-sponsored surveys and longitudinal study activities. Although this approach could result in increased costs to the federal government, recognition of the potential importance of resulting information would justify the expenditure.

4. Any attempt to construct model state and local information systems should include an examination and analysis of the record of past efforts such as the Midwestern State Educational Information Project, the USOE Handbook Series, the Belmont Project, the Committee on Educational Data Systems Manual and others.

5. NCES should exercise caution in balancing the legitimate desire of researchers and policymakers for detailed information with the cost and capability of institutions providing information. In its redesign project, NCES should consider factors such as the separation between research and statistics, state and local policymaking as contrasted with the federal role, and finally, the cost of information systems and their potential intrusion on the instructional process.

6. NCES should approach collection of data directly from local agencies with caution. While this is appropriate at times for sample surveys, it intensifies and compounds extant problems of data definitions, comparability, reliability and potentially detracts from the possibility of developing administrative record systems that will meet a variety of needs. Additionally, appropriate federal/state/local protocol should be honored in intergovernmental communications. CCSSO has long recognized the need to collectivly work with the federal government to ensure that data collected is valid, useful and collected with a minimum of intrusion. The Committee on Evaluation and Information Systems (CEIS) continues to be an effective vehicle for accomplishing this task.

Again, the Ad Hoc Committee appreciates the opportunity of providing input into the process and encourages the writing team for the plan, NCES staff, and yourself to call upon us for assistance.

Sincerely,

George Rush

George Rush

ASSESSING THE EDUCATION STATISTICS INFORMATION NEEDS OF NON-SEA PUBLIC POLICY DECISION MAKERS

Invited paper prepared by The Council of State Governments' Office of Information Services for the National Center for Education Statistics.

by

Mr. E. Norman Sims, Director
Office of Information Services

Dr. Deborah A. Gona, Coordinator
Survey Research Services

June 1985

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Assessing the Education Statistics Information Needs of Non-State Education Agency Public Policy Decision Makers

The last half century in the United States brought a significant change to education policymaking as our system of public education moved from one with a "political" character to one with a "professional" character. This has been noted by Cremin who explains:

> The schools of a century ago -- party-dominated, patronage-controlled, professionalism ignored -- were transformed over the next half century by a combination of businessmen, professionals, and a new breed of university-trained administrators. Their enemy was the political machine and the political boss.[1]

One outgrowth of this movement was the development of a distaste by the professional education community for all things political. As a result, the school profession began to maintain the "purity of its motives and values and the sinfulness of party activity and partisanship."[2] In the late 1950s, however, educators began to see themselves as the focus of a discontent generated by their clientele. In the 1970s, this discontent had grown to the point that serious questions were being asked about the quality and quantity of professional educational services which seemed to be growing in expense.[3] Most recently this concern has been expressed by the report of the National Commission on Educational Excellence which recommends a wide range of educational reforms to halt the "rising tide of mediocrity."

In part because of this discontent, there is now a movement at the policymaking level away from technical, professional educators toward domination by political actors. Social and economic conditions, which have in the past supported the image of professionalism and independence, have changed. Educational policymaking has become more political than technical.[4]

Accompanying this movement have been two other trends which are of equal or superior importance: a shift of the primary political arena for education from the local level (the local education agency, or LEA) to the state level (usually the State Education Agency, or SEA)[5]; and a resurgence of the non-SEA state decision makers, such as the state legislature and the governor, as major factors in the development of state educational policies.[6]

Various forces are combining to cause these shifts. They include: judicial actions -- particularly in the area of school finance -- which have forced many state governments to reconsider fundamental educational policies formulated within SEAs and LEAs; federal involvement in educational finance and policymaking which has also spurred the development and expansion of the SEAs; and the

impact of movements to reduce taxes, particularly by those who felt that they carried an unnecessary local property tax burden.[7]

As educational policymaking has moved from the local, technical-issue level to the state, public policy decision maker, an unfortunate schism developed at both the level of the user (between the professional educator and the political decision maker) and the provider (between information and policy centers serving legislators and executive branch agencies and those serving educators).

Unfortunately, for those involved in improving state educational decision making by providing adequate information, this schism has more than historical importance and is nowhere more apparent than in the area of research into the information needs and uses of these state decision makers and the provision of information to them. Obviously the non-SEA political actors make important education decisions. But we know very little about the information they use, want or need in the process.

The federal government, through the U.S. Department of Education and its National Institute of Education and National Center for Education Statistics, has made great strides in helping to improve decision making and use of information in SEAs and LEAs, not only through research into better education programs but also through the the dissemination of the results of these research efforts. Indeed, numerous studies have supplied information about educational decision making within the SEA.[8] Moreover, work by a variety of educational groups has enlighted us about several aspects of information delivery to decision makers within the SEAs and LEAs.

The state Capacity Building (CBG) and Research and Development Utilization (RDU) projects, as well as the Research and Development Exchange (RDx) and National Diffusion network (NDN) programs, have provided crucial data about facets of the information process.

Throughout the working life of each of these projects, new knowledge emerged about the process of decision making, resource delivery and client assessment.[9] But as Mattas and Rawnsley have suggested, in the design and operation of information services it is important to know more than which members of the <u>educational</u> community (the direct clientele of the educational research community) make use of services offered and what information they request. Research interest should also be directed toward <u>all</u> knowledgeable, and unknowledgeable, information users and non-users who have influence on the policymaking process.[10]

Again what is quite clear as we consider the great national debates over such issues as the role of the private sector in education and the operation of our intergovernmental system, is that the major policy decisions which affect education will not be made entirely in the SEAs and LEAs. They will be made by legislators, legislative staffers, governors, budget directors, state planning officers and others. These other actors may be familiar with the results of educational research and its application to policy, but it

is more likely, as we shall see later, that their knowledge is scanty (coming to them secondhand) and based upon information which is poorly provided or limited in applicability.

It is also likely that educational decisions at the state level will be based upon information provided by sources other than those normally considered as information providers by the education community. The Council of State Governments 1984-85 edition of the Book of the States, for example, lists 90 organizations which may be called upon by state policymakers to deliver this information.

The day when, as political scientist Alan Rosenthal reports, a typical state legislator, asked about the legislative role in elementary and secondary education, replied quizzically, "Education is a local thing; we don't have anything to do with that; there's a formula", is over.[11] The schism between the technical and the political, which has led to research into the information needs and uses of professional educators while ignoring the political community, and the service agencies that support them, needs to be bridged.

It is the view of The Council of State Governments that the U.S. Department of Education -- acting uniformly or through an internal entity such as the National Center for Education Statistics -- should take the steps necessary to construct this bridge by planning and taking action to achieve three program goals:

-- Increase our knowledge and understanding of how state educational policy decision makers use statistical information to make decisions and about their information needs;

-- Assess the capacity of statistical information providers to assist state education policymakers to make better use of available statistical information resources, and offer statistical information providers insight into mechanisms for improving their services; and

-- Based upon this information user and provider analysis, develop a plan for improving the communication of useful statistical information to the non-SEA state educational policymakers.

When these goals are met, it is The Council's view that the U.S. Department of Education will have significantly added to our knowledge of how the process of governing education and making policy decisions might be made more effective. It will have also increased our understanding of the nature of program administration by keying on executive and legislative branch decision makers as information users and the national service agencies (such as The Council of State Governments) which support them.

It is the experience of The Council of State Governments that the provision of better information to state officials does result in better decision making. But information is a powerful tool only when it is provided to the right people, in the right way, at the right

time.

The effort we suggest would assist the education community in forging more powerful information tools by providing the knowledge to give these tools better form and function.

The Information Needs of State Policymakers

In the early summer of 1978, a symposium was held in Arlington, Virginia, to review the experiences of various state and federal managers with the institutionalization of federal programs at the local level.

This symposium, sponsored by the MITRE Corporation, the National Institute of Education and the National Institute of Law Enforcement and Criminal Justice, focused on demonstration projects, but the comments made by the participants were telling from a number of perspectives. Mr. David L. Foote, Executive Director of the Colorado State Office of Planning and Budgeting, provided support for the effort we suggest when he told the federal program managers:

> If I had a single recommendation to make to the federal establishment ... it would be to take planning seriously. Not planning for demonstration, but what I would call policy planning, and making sure that we benefit from utilizing information that we continually generate and ask others to generate.[12]

As NCES has indicated through this requst for papers, the public policy challenges facing our system of federalism -- particularly in the area of education and its administration -- are formidable and can only be dealt with, as Mr. Foote indicates, by providing information to state policymakers in the most effective ways possible. But as we have noted above, these policymakers include a broad spectrum of public officials inside and outside of the SEA.

In studying how legislative, administrative and judicial policies and governmental organizations affect education, the most important questions may be: What statistical information is used by state policymakers to make decisions?; What information do they think they lack to make better decisions?; How do they wish the material to be presented to make it most useful?; What lessons can statistical information producers and providers learn from the information needs and wants of these state policymakers?

It seems, however, that because of the political/technical education schism, educational research has not focused on the information needs of decision makers in the political environment. One portion of the effort The Council would propose to NCES would be to attempt to study the information barriers to good education policy decision making which exist in that environment.

A project recently completed by the ERIC Clearinghouse on Teacher Education attempted to overcome one of the barriers to sound policy planning by identifying state policymaker information needs. But this study focused on three of the national state government service agencies rather than the policymakers themselves.

Several efforts have been made by the state government research community -- including efforts by The Council of State Governments -- to assess the information needed and used by state public policy decision makers. They have dealt, for the most part, with the elected members of the legislative branch, but have not considered conditions as they specifically affect education. These studies have centered on: the peculiarities of the legislature as an information-using institution; the kinds of general information legislators say they need; the interpretation of their needs by their staff; certain effects of the decision-making process on information use; and some constraints of the political environment on good information use. The findings of these non-education issue specific studies provide the research background for the first goal of the proposed effort.

In general, state officials (particularly state legislators) must make many decisions within a relatively short period of time. This is largely due to the fact that the volume of state business with which they must deal is rapidly increasing and the questions put before them often require quite specific and detailed knowledge of the issue area. As a result, the kind of information these officials need in order to make timely decisions is often not readily available.[13]

Moreover, researchers have found that these time constraints have forced the state official to become an information "schizophrenic." Generally the decision maker says that he or she wants information that is trustworthy, objective, reliable, comprehensive, applicable, and timely.[14] However, while they might be quite vocal about the quality and comprehensiveness of the information desired, they rarely seek elaborate information on policy issues. Indeed, in the state legislature this might lead to an information overload causing, "Paralysis (and) making things incomprehensible and unmanageable."[15]

As a result, although policymakers talk about their information needs, and on some topics their needs may be intense, they rarely seek elaborate information. When they get it unsolicited they do not know what to do with it.[16] Even legislative staff report a difficult time interpreting legislators' requests because of this duality of information needs.[17]

If the literature's portrayal of state legislators (and, although most of the research tends to deal only with the legislative branch, there is reason to believe that these conditions exist within the top-levels of the executive branch as well) is accurate, why should we be concerned with the statistical information needs of these actors? When we consider the "general" use of information, it does seem as though this schizophrenic information-seeking behavior would argue against any efforts to improve the provision of information relating to education issues.

But while this composite portrayal is essentially accurate, it is misleading when viewed apart from other aspects of the state decision making process.

Throughout a legislative session, for example, legislators will receive information they cannot use. This is because the information did not reach them at the right time in the legislative process; it did not help with problem solving; it did not support the decision makers' predispositions; it was not in a format which enabled the legislators to relate it to constituent needs; or it did not tell the legislators how colleagues felt about the issue.[18,19,20]

It is also a political reality that not every legislator or executive branch decision maker will be interested in every issue. Yet these decision makers will still face the prospect of having to make decisions on those issues either by endorsing them as executive policy or voting for or against them during the legislative session.

As a result, these officials will be forced to rely on decision making "shortcuts" in order to survive the flood of decisions that must be made. One method legislators have for making quick, but palatable decisions, is to rely on the orientations or predispositions they have brought to, or developed early in, their legislative careers. It is improbable that the individual legislator will have preset notions on every issue to be addressed, but it is likely that one or more of the legislator's colleagues will have some ideas about, or expertise in, a particular issue area. It is expected then--and supported by the research literature--that when an individual policymaker cannot arrive at a decision on the basis of personal judgment, he or she will look elsewhere for assistance. But to whom does he or she look?

Legislators look mainly to their colleagues and rely on <u>their</u> judgments.[21] A small group of individuals within the legislature is likely to be regarded as expert in a particular subject or issue area. Other members can usually rely on their ability to produce policies which reflect the values of the group as a whole.[22] Various studies have shown that policymakers tend to look within their own group for cues for decision making rather than to outsiders (such as SEA, federal education, or educational lab and center staff).[23,24,25,26] Lobbyists particularly have recognized the importance of seeking out those members of the policymaking group who are seen as opinion leaders.[27] Some education lobbyists have documented their strategies for informing these key legislators.[28]

These opinion leaders are also important in that they tend to occupy key positions in a two-step flow of communication between interested groups and individuals on the outside and the rest of their colleagues on the inside.[29] As a result, the ways in which these individuals with substantive knowledge make decisions, and the criteria they employ, will differ from that of their less knowledgeable, less interested, fellows.[30]

But it is unclear just how these non-SEA "opinion leaders" make

their decisions, and what their statistical information needs are. More specifically, it is not clear how the non-SEA legislative and executive branch education opinion leaders make such decisions and employ statistical information.

On the basis of recent studies[31], we have some ideas as to why legislators become involved in education policy and are regarded as leaders in the area (e.g., legislator's background and/or district characteristics). On the basis of some isolated case studies, we also have some understanding of the factors which affect education policymaking in various states.[32] But these findings leave many questions unanswered and complicate our understanding of the decision making process as it relates to education:

--The literature suggests that education policy questions are handled differently than other policy questions by state legislatures, simply because of the nature of the political and educational environment.[33]

--The key opinion leaders in the field of education may not be make up solely of members of the education committees and education legislative staff, although that is usually where information studies related to education policymaking focus their attention. The leadership of the appropriations and finance committees, for instance, also have power over educational policymaking. A participant in education politics from a midwestern state notes, "They can have a nice time in house education talking about textbook selection, competency based education, and a lot of other things like that. Not much is going to happen on those things. It's the people who control the money who are calling the shots up and down the line."[34]

--The greatest source of information used by the state education community, the information produced by the federal government, is not widely used by the non-SEA public policymakers. Research on the influence of this information upon state political actors is surprisingly sparse. This is partly because it is relatively new, partly because the information is seen as being more useful to the school community, and partly because the federal information base on educational operations has not resulted in any theory-guided research literature.[35] Indeed, one study found that federal information providers constitute the last group state non-SEA problem solvers call upon for solutions.[36] Wirt has noted that the federal thrust for providing information to this group has been diffused, in part because, "Washington seeks to deal with complex organizations with a limited understanding of them."[37]

--The factor which may have the greatest effect on good information sharing between the education community and the public policy decision maker is the previously mentioned antagonism between the professional educator and the politician. Halperin notes that the schism between the technical and political actors continues with educators commonly saying that:

"Politicans have a short term view of the world; their primary interest is in their own constituency and their narrow sectional, ethnic, regional or economic interests; and are poorly informed on educational issues." The politicians, on the other hand, say: "In order to frame social policy, we need facts, not generalities. We also need practical responses to immediate problems. Yet rarely do educators have the information we need to make sound policy; and, educators ought to know how to communicate, but there are few groups that speak less clearly, less concisely, and with more obfuscation. Instead of precise, comprehensible, here-and-now language, what we get is usually too olympian, too utopian, too abstract, or too fuzzy to be helpful."[38]

The Research Opportunity

What is clear, after a brief review of the literature concerning the use of and need for information by state public policy decision makers, is that the research community cannot now identify mechanisms for providing these political actors with more useful information on educational issues until more is known about the information environment.

As we have noted, studies of the use of information by the educational research community have historically centered on the policymakers in the state and local education agencies. Studies of the information environment of the state political actors have addressed general questions and have tended to favor studies of the legislature. These latter studies are even more limited--from an educational policymaking perspective--when we remember that the literature suggests that education policy questions are handled differently than other policy questions by state legislatures.

Additionally, recent studies in the education area (such as those by Rosenthal) have centered on only a portion of the political information network: the legislative education committee members and staff. The literature suggests that two-thirds of this network may have been overlooked: the decision makers who affect educational policy but are not normally seen as being part of the system (such as executive branch planning and budget officers and legislative branch finance committee chairpersons), and the education opinion leaders in both branches.

While informational barriers to better, more effective, state decision making exist in the political community, there is no evidence that these barriers are inherent to our political system. Barriers to providing adequate information for proper decision making were also noted in SEAs and LEAs, but have been greatly reduced by research efforts which have analyzed these barriers and suggested methods to overcome them.

What remains is the problem of identifying the best means of providing useful statistical information to the political decision

makers within their unique environment. Given that information is "that which reduces error," we should conclude that providing better, more useable, statistical information to these important political actors will encourage improved educational policy decisions outside of the SEAs, in the same way that providing better information to SEA and LEA leaders has improved their capacity to make better decisions.

The research opportunity presented to NCES, then, is to: assess the information environment of the non-SEA education policymakers; review the results of this assessment; based upon this analysis, construct improved communication mechanisms to overcome the problems of legislative timing, relevance, personal predisposition, format, relationship to constituent needs and peer thinking; test these mechanisms; and disseminate successful approaches to the state educational policymaking community and those who serve them.

Conclusion

In its 1984 study of state response to the recommendations of the National Commission on Excellence in Education, The Council of State Governments found that state school leaders were taking the matter of reform for educational excellence to heart well before the Commission's report was finalized.[39] In this regard the Commission's work -- and the work of many other national taskforces assembled since the Commission's report was released -- serves as an additional propelling force for improvement efforts, but is probably not the initiator of the vast majority of state educational improvement efforts.

If America is at risk, and if the reforms outlined by the Commission are what are needed to achieve excellence, then there is every indication that the states are already taking the necessary actions.

But what was also clear from The Council's study is that state officials are attempting to look well beyond the Commission's report. Many states did not take the Commission's report for granted and numerous independent state and local task forces have been established to identify specific areas for improvement in each unique jurisdiction.

It is well that they have, for what seems clear is that for educational leaders to make additional headway in improvement efforts, additional experience is needed in communicating their "message" to the state political decision makers. The Commission gave weight to the importance of political actors at all levels of government, but is silent on the matter of how opportunities become programs and needs become budgets. There was every indication from The Council's study that the channels of communication -- and the quality and quantity of information carried by them -- which bring about informed educational opinion in state decision makers, need additional study.

The program goals The Council suggests to NCES in this paper would be an ambitious undertaking, but in electing to take action in this area The Council expects that the Center would be able to: accumulate

extensive knowledge about statistical information as it is used by non-SEA executive and legislative policymakers in making decisions which effect education; assess the meaning of the findings as they relate to the information, dissemination and research programs of the educational research community, the federal education actors, state education agencies, local education agencies, and education public interest groups; and develop a model for improving the communication of statistical information to these actors.

The Council of State Governments would look with enthusiasm toward a long-range plan developed by NCES which would investigate the areas outlined above.

There may be no greater waste than information which goes unused. The Council looks forward to working with NCES to insure the widest and best use of statistical information by state decision makers.

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NEEDS FOR DATA IN EDUCATION

Considerations in Redesigning the Elementary and Secondary Data Program of the National Center for Education Statistics

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NEEDS FOR DATA IN EDUCATION

Considerations in Redesigning the Elementary
and Secondary Data Program of
the National Center for Education Statistics

Reliable measures of educational status and trends are essential if we are to be able to monitor progress, understand change and set policy in education. That statement may seem a truism applicable to any aspect of the national interest but it is especially true in the educational realm. It is worth citing some of the reasons why this is the case.

The problem of deciding what data to collect is especially acute in education for several reasons. The first is the decentralization in this country of both the sources of information and the structures of decision-making in education. A second reason is that educational issues are intricately interwoven with and affected by a host of factors -- economic, political, social, demographic -- in the society, so that there are few natural boundaries to the relevant sources of information we may need to draw upon. Many non-educational agencies collect data that are related importantly to schooling but often they collect them in a form that precludes their easy incorporation into educational analyses.

Education's characteristics of dispersed control, varied record-keeping, diverse goals, and incompatible measures of results serve both to compound the data-gathering problem and to generate the tremendous need for a systematic, coordinated approach to a set of indicators of the health of the educational enterprise. Moreover, the diversity within the country offers the hope that reliable indicators, derived in comparable form from different parts of the country or from schools operating under contrasting circumstances, can pay big dividends in increased understanding of what practices seem to work well or poorly, so that we have a chance of not only describing our educational health but also improving it.

Among the key questions to be addressed are who will use the data for what policy purposes, and what information elements do they need to do the job? Further questions are what agency or agencies should collect the data, how should they collect it, and what role should NCES play in locating, assembling, reporting, and interpreting the information?

Audiences

There are multiple audiences for data about education. Since educational decisions are made at state and local levels, the information needs at those levels clearly must be met. The "local" decision-makers, however, need data not only about their own state or district but also about the nation. They need educational status and trend data on a multi-district, multi-state, national and international basis in order to compare their needs, efforts, and accomplishments with those of others.

Several groups must have national and international data because their responsibilities are national. They include federal legislators and administrators, research people examining the factors that influence educational progress or such questions as the interaction between education and economic development, and business people whose prospects for both manpower and markets are affected powerfully by what happens in education, both in the U.S. and abroad.

There is, then, a set of needs for data at the district, state, national and international levels that arise from the responsibilities of diverse groups of people. There is no way to distinguish the levels of aggregation of data needed by persons with broader or narrower geographic areas of responsibility: the broader picture provides an essential context for even tightly focussed local decisions.

Finally, the media and the public have a vital stake in the condition of education -- a critically important "need to know." This need goes beyond raw data to a need for analysis and interpretation. This latter requirement is a hard one for any agency to meet in a way that will be perceived as even-handed but one that is nonetheless essential.

1. Need for A Program to Delineate Issues

The kinds of data needed obviously depend on the kinds of issues to be addressed. The delineation of the issues that the data should illuminate is a critical step and one that needs explicit attention. We need an intensive effort to develop a taxonomy of issues to be dealt

with that will in turn generate the data to be collected. Second, we need a system for determining priorities within the taxonomic categories. Finally, we need to provide for regular review and modification of the taxonomy and priority matrices.

Collecting, analyzing, and reporting data is expensive, despite the powerful advantages offered by sampling of both respondents and data elements. There must always be trade-offs leading to the inclusion of some kinds of data and the exclusion of others, with the subsequent regrets when people find in perfect hindsight that some critical information is missing while information of other kinds is in oversupply.

While we will never be able to anticipate all questions, we might well be able to do a more satisfactory job of it if the effort to anticipate were itself made explicit and systematic. We need a taxonomy of issues within which to classify the questions to be asked, which in turn will generate a list of the data we need. The existence of an explicit matrix, giving shape and structure to the issues to be examined, would help to focus attention on the important policy questions at the most critical time, i.e. before the design for data collection has been decided upon.

A recommendation to NCES, then, is that a project be commissioned to develop a taxonomy of issues to be addressed by education data and related statistics. This project would be of greatest value to the present redesign effort if undertaken in the summer of 1985. Such a project could involve searching the literature in education and in other fields, preparing a set of discussion papers, and convening a working group of knowledgeable people to develop and publish a proposed

taxonomy and priority system for widespread comment and for suggestions as to overlooked sources of data. The results would be of enormous value to the U.S. Department of Education in pursuing the redesign of its data program. The taxonomy would be subject to periodic revision and expansion as new questions are proposed and defined in future years.

An Interim Working Set of Issues

In the absence of the results of a specific effort to delineate issues, we may turn to useful statements now available to guide our thinking. An excellent example is the set of issues developed in 1983 as a guide to the reformulation of the National Assessment of Educational Progress.* Excerpts from the pertinent section appear below:

> Policy Issues NAEP
> Should be Able to Address
>
> It seems clear that NAEP must now serve a wide audience with diverse needs. Criticism of NAEP in the past has underscored its failure to be responsive to policy needs (Wirtz & Lapointe, 1982; Milrod, 1980; Wiley, 1981; Sebring & Boruch, 1982). What are some of the isues that NAEP should focus on as it reorganizes to meet the challenges of the eighties?
>
> Among the variety of pressing issues, three general policy areas stand out which should be addressed by NAEP because they require reliable data on student competencies and achievement: student competencies as they relate to national concerns; student achievement and attitudes as they relate to human resource needs; and, student achievement

*Messick, S., Beaton, A., & Lord, F. National Assessment of Educational Progress: A New Design for a New Era. Princeton, N.J.: Educational Testing Service, March, 1983, pp. 11-15.

as it relates to school effectiveness. In addressing these issues NAEP must not only be able to provide a national overview, but must also be relevant to state and local concerns — not for the purpose of needless comparisons among states or school districts but to assist individual states and localities in meeting their goals and objectives.

National Concerns

Since NAEP's inception, the federal government has designed and implemented education policies to provide equal educational opportunity to all citizens and to assure that young adults would be able to contribute to society in terms of both productivity and participation in the democratic process. The government clearly understands that an educated populace is a fundamental requirement for the nation's political and economic well-being. A major responsibility of NAEP should be to provide information for governmental and educational policymakers on the effects of their efforts and to act as an "early warning system" of potential problems.

At a minimum, NAEP data should be relevant to the following kinds of questions:

Are today's students learning the skills necessary for productive functioning in America in the 1980s? The 1990s? The year 2000?

Are students in urban, suburban, and rural schools all being adequately prepared?

Are public and private school children equally well prepared?

Do children have access to programs preparing them to deal with the computer age?

Are minority and disadvantaged youngsters being so prepared?

What types of programs or allocations of resources seem to make a difference for disadvantaged and minority students?

Are children from limited-English-speaking homes being provided the necessary skills?

Do students who have received special services under federal or state programs perform better than similar children who have not had access to those programs?

Do students leave formal education with positive attitudes toward productive work?

Human Resource Issues

The federal government is concerned with the flow of human resources to assure a work force competent to function in an advanced technology society and the necessary military personnel to protect American interests. Planning for human resource deployment is a complex process that requires reliable information on young people's competencies, training, and attitudes....

In the past we have vacillated between feast and famine in critical personnel areas... NAEP should assist governmental and educational policy planners by contributing information on the following kinds of questions:

What are the career goals of high school students?

What are the attitudes of today's youth toward the military? toward business?

To what degree do students with access to science and high technology curricula choose careers in science more than those with no such experiences?

Are we preparing youth to meet the human resource needs in the health sciences? the humanities? teaching?

Are vocational/occupational programs equipping students with the skills they need to function in the work place?

School Effectiveness

School administrators are faced with rising costs and multiple demands on limited resources. They must choose among a host of competing interests. Achievement data, to be

most useful, should be tied to other information to guide policymakers in deciding how they might best organize their programs and disperse their funds. Although achievement is influenced by many factors -- some school related, others beyond the school's control -- test data are one measure of the effectiveness of schools. Holding other variables constant, what factors within the purview of school administrators appear most likely to contribute to increased achievement? How can NAEP assist state and local policymakers to improve schooling?

If NAEP is conceived not merely as a social indicator, but as a tool to identify problems and suggest areas of potentially productive research concerning educational progress, NAEP should attempt to provide data that address the following kinds of policy issues:

How do pupil/teacher ratios appear to relate to achievement?

Do students with preschool and/or kindergarten experiences seem to perform better than those without such programs?

How do particular curricular approaches relate to student achievement in reading? writing? math?

What are the relationships of in-service training programs, teacher turnover rates, and teacher competency requirements to student performance?

The NAEP-related list of questions is not sufficiently elaborated to serve the broad requirements of the NCES redesign. As an obvious example, it omits questions about the relative effectiveness of education in this country vis-a-vis others. A taxonomy of questions should include questions about how education is faring not only as

compared with education in previous years but also as compared with education in other lands. Comparisons of student accomplishment in the United States with that elsewhere, accompanied by information about differences in educational practices associated with different results, can not only tell us how well we are "competing," it can also help us raise our sights in areas where others may be doing better and lead us to examine educational practices elsewhere that seem to be related to achieving better or worse results.

2. General Design Issues

A clear mapping of the questions to be answered from the data must be followed by a decision as to a strategy for gathering the statistics. The NCES activity is obviously not conducted in a vacuum. Many data-collection programs of other agencies, public and private, gather information that is directly or indirectly relevant to educational issues. In the single area of "educational outcomes," even a partial listing of large data bases that contain information derived from tests given in the U.S. contains over two dozen entries:

Precollege	Modal Age
National Assessment of Educational Progress (NAEP)	9
National Assessment of Educational Progress (NAEP)	13
Secondary School Admission Test	14
Metropolitan Achievement Tests	16

Iowa Tests of Educational Development 16

NCES 1980 High School & Beyond (HS&B) Sophomore Cohort 16

College Board Preliminary Scholastic Aptitude Test 17

NAEP 17

Armed Services Vocational Aptitude Battery 17

American College Testing Service 18

NCES 1980 Senior Cohort-Base Year Survey 18

Transcripts of High School Grade (from HS&B) 18

CEEB Admissions Testing Program (Scholastic Aptitude Test, Achievement Tests, Advanced Placement Examinations) 18

High School Equivalency Test 19

College and Beyond

Cooperative Institutional Research Program 19

NCES 1980 HS&B Senior Cohort--First Followup 20

NCES 1980 HS&B Sophomore Cohort--Second Followup 20

NCES Higher Education General Information Survey (HEGIS) 20

Graduate Record Examinations 22

National Teacher Examinations 22

Undergraduate Academic Transcripts (from HS&B) (17 to 22)

NCES 1980 HS&B--Senior Second Followup 22

NCES Recent College Graduate Survey 22

NRC Survey of Doctorate Recipients 26

Other surveys that are pertinent include those that are specialized by subject area (e.g. the RTI National Science Survey for ages 6-12), those that are international in scope but include the U.S. (e.g. the International Surveys of IAEA), and those that provide data only about other countries (e.g. the equivalent of our NAEP program, conducted in Great Britain). Still others that have developed large-scale longitudinal data bases over extended time periods, were sponsored by the U.S. Department of Labor in order to track educational and labor force activity. (These are found in the DOL National Longitudinal Surveys (NLS) of Labor Market experience and the Continuous Longitudinal Manpower Survey (CLMS).) Just developing (and maintaining) a good catalog of sources would help.

Trying to merge these data sets is a daunting challenge but an activity that should be studied and tried at least experimentally. A system of planned "linking sections" common to different data bases might prove feasible and helpful. Even if a complete merging is not feasible, some useful dimensions of comparability using subsets of data may be open to discovery and use. At least it should be possible in the course of such a study to develop good documentation, available centrally, about the comparability of the several files, including mundane but essential facts such as whether or not the data can all be run on the same computer! Such documentation would in itself be extremely useful.

The list includes examples of data from both governmental and non-governmental agencies. NCES already arranges to receive most of the pertinent data from the government agencies. The statistical series produced by non-governmental organizations in some cases are

carefully maintained and are capable of illuminating special areas within the particular sphere of interest of the private organization. Cases in point are the data sets about college or graduate applicants, their test scores and their educational histories that are collected routinely by agencies like the American College Testing Program, the College Board and Educational Testing Service. The educational significance of these data in the public mind became dramatically evident in the 1970's when the persistent decline in the mean scores of SAT takers was first noted. NCES already draws on some of these sources of test data for their information on outcomes. A further step might be advance joint planning of issues that could be explored more effectively through cooperative arrangements similar to the agreements with SEA's or to existing interagency agreements within the Federal Government.

The thicket of problems becomes even thornier when one goes beyond data sets in a single broad domain -- educational outcomes -- and includes the many areas touched on in current population surveys by the Census Bureau and workforce surveys by the Department of Labor. Since the information in these data sets was not gathered on similar samples by asking a consistent set of questions, the job of NCES in trying to bring it together in relation to education issues is extremely difficult. The ideal (from one standpoint) of achieving complete comparability across data sets is impractical. The basic need to maintain continuity of long-running data sets is by itself a major deterrent to precipitate change. Nonetheless, efforts should obviously be made to remove unnecessary barriers to our ability to pool data

across agencies. The present juncture, when NCES is in the redesign process, would seem to be a good time to explore the presently attainable degree of planned compatibility of efforts without jeopardizing the unique needs of each participating agency.

Frequently one finds that two surveys include questions intended to represent a whole complex of information describing a construct of common interest, such as socio-economic status, but have selected different questions. It would be worthwhile for an interagency authority such as OMB to study the extent to which the answers to different questions can be taken as valid surrogates for the broader construct.

Notwithstanding the serious obstacles to attaining compatibility across data files, we recommend that NCES take the lead in exploring with other agencies, public and private, the feasibility of achieving greater compatibility among data sets. An effort should be made to increase compatibility in the short term where possible or over a longer period where that is required. It may be that some highly desirable steps toward eliminating redundancy of effort that cannot be completed in the near future could be accomplished in 5, 10 or 15 years if started now.

3. "What" Studies and "Why" Studies

No matter how successfully NCES may be able to draw upon extant data bases to meet its needs, it will still need to make a very extensive primary collection effort of its own for several reasons: to fill in the gaps in some areas, to acquire data in a form compatible

with its other data elements, or to fulfill its role as the principal data source in educational areas central to the purposes of NCES.

Many of the statistics collected (e.g. per pupil expenditure in public schools by state) are facts that have face validity as important in their own right. They answer legitimate questions of "what is."

The statistics on "what is" are more useful in answering questions about present conditions than in suggesting how or why those conditions came about. All too often, people juxtapose two or more sets of data about disparate conditions, find some instances of apparent correspondence, and infer a causal connection. The cross-sectional data of annual surveys are, of course, poor bases for causal inference. Much better for answering "why" questions are the kinds of data gathered in periodic studies such as the National Longitudinal Study of High School Seniors of 1972 (NLS) and the High School and Beyond Study of 1980 (HS&B).

The large scale longitudinal studies are proving to be critical in illuminating issues of public policy, since they provide a basis for tracing the later correlates of earlier student experiences, and they do so in the context of a wealth of background information. The background data -- about financial support, interests, subjects studied, extra-curricular activities, and so on -- help in interpreting the meaning of changes in attitude or in student learning or in decisions to continue or to drop out, or in changing job aspirations, both in general and differentially by such variables as sex or race.

We endorse strongly the view that the longitudinal studies are a uniquely valuable educational resource and urge that they be designed as a long-term and recurrent element in the NCES data-gathering system. Insofar as possible, regular long-term funding expectations (or, ideally, commitments) should be established and broadly announced so that other agencies could reaonably anticipate answering their questions on the basis of a continuing data series rather than feeling compelled to establish duplicative efforts.

Both the NLS and HS&B studies trace the progress of students from the high school years forward. In order to increase our understanding of what is happening in the pre-college years and why it is happening, we need a companion study that begins in the pre-school years and follows pupil progress through the grades, eventually linking up with the HS&B sample in secondary school. We urge that a "Preschool and Beyond" longitudinal study be instituted by NCES as early as possible. Such a study could be instituted as a stand-alone effort or possibly created as a longitudinal sub-study within NAEP. Ideally it should be undertaken on a broad national scale but if that approach is too expensive, thought could be given to the possibility of mounting it in a sample of cooperating states.

Data and Information

A legitimate question is how far NCES should go beyond gathering and reporting raw data by providing the analysis and interpretation that turn data into information.

In this country generally, the dramatic improvement of information processing technologies is likely to lead to a sharp increase in the volume of data recorded, manipulated and presented. We will have to be very deliberate in our procedures to avoid swamping audiences with undigested data "because it is there." The quality of synthesis and interpretation will have to keep pace if we are to realize the benefits of collecting the data in the first place.

It is our impression that at present the bulk of NCES's activity is devoted to providing data. It is our further impression that a growing component of NCES's work is in the areas of analysis and interpretation, through visual presentation and commentary in The Condition of Education, through the new publication on Indicators, and through a variety of special reports on particular topics. We applaud the shift in emphasis toward interpretation and encourage a continuation in the same direction.

We believe also that a strong effort should be made to encourage recognition of authorship of NCES's interpretive commentaries -- another trend characteristic of recent years and one that could be carried still further. Signed analyses carry with them appropriate professional recognition for staff, with concomitant benefits in morale and career advancement. They also create at least some small theoretical distance between the responsibility attributable to the author versus the agency, even though in times of crisis that distance is usually very slight except in a purely academic institution.

General Issues of Strategy

Some of the other strategic issues to which NCES is no doubt giving attention in its review include:

The periodicity of surveys and creation of public awareness of the schedule for collection of annual, biennial, decennial, etc. data

Allocation of resources among cross-sectional and longitudinal studies

Proportion of budget allocated to domestic and international surveys

Reliance on NCES's own efforts versus dependency on data collected by others

Extent to which data drawn from other agencies will be based on cooperative pre-planning versus serendipitous discovery

Desirability of creating an interagency mechanism for coordinating data collection plans

The matter of how to encourage widespread use of the NCES data deserves intensive review. Possibilities such as more extensive use of networking to make the data readily available need continuous review as the available technology advances. Obstacles to, and techniques for encouraging, public use of data tapes should be explored, as should mechanisms for sharing insight and problems; e.g. creation of an AERA Special Interest Group for people using the High School and Beyond data sets, or creation of a consortium of data base users.

4. Specific Design Issues

The foregoing comments have been concerned with general issues of design. A more specific set of issues is posed if one asks a question like

"what's wrong with the data we collect now? This is essentially the approach taken by Cooke, Ginsburg and Smith in their useful paper.*

Anyone who has worked with the NCES data or virtually any other data set will recognize and be able to add to the deficiencies reported in "The Sorry State of Education Statistics." The best way to improve the situation is a question of another order.

Many of the difficulties noted by Cooke, Ginsburg and Smith stem from NCES's dependence on the 50 states to collect and report data consistently. The cooperative arrangement with the SEA's has obvious advantages. Some agreement on common definitions seems essential, however, if the aggregated data are to be meaningful. It is suggested that NCES work through the Council of Chief State School Officers to procure comparable data from the SEA's. This need not disturb the individual state's internal definitions of variables such as attendance. A viable procedure might be to arrange for access to all of the raw data (e.g. number of enrolled children, number absent with excuses and without excuses, etc.) from which the SEA and NCES (or CCSSO for NCES) could derive statewide statistics to fit their own definitions. It would seem appropriate for NCES to stand ready to provide technical assistance to states that request consultation on the best ways of collecting and presenting their data.

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*Cooke, C., Ginsburg, A., & Smith, M. "The Sorry State of Education Statistics," January 1985.

Some problems, like students' tendencies to overstate their course load, probably cannot be eliminated. It is suggested, however, that a continuing series of studies be undertaken of characteristic student response bias in key areas as a basis for deriving response adjustment coefficients. These coefficients could be applied systematically to provide more valid estimates of the true situation. The studies needed to obtain estimates of response bias would be intensive small-scale studies that would need to be repeated perhaps every 5 or 10 years, depending on the index. In some cases where the discrepancy between the response and the factual situation seemed extreme (e.g. where 80 percent of high school seniors report that they have taken a geometry course compared with 25 percent shown on transcripts) the most useful result would be clues as to how to revise the question rather than calculation of a response adjustment coefficient.

* * * * *

ETS is well aware that many of the suggestions made above may already be well represented in the procedures or the plans of NCES. We decided that in this paper we should err on the side of inclusiveness at the risk of redundancy. We will be glad to clarify points that need further explanation or to elaborate on ideas that may need exploration in detail.

THE LUTHERAN CHURCH-MISSOURI SYNOD

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June 11, 1985

Mr. Emerson J. Elliott
Administrator
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Dear Mr. Elliott:

The elementary and secondary schools sponsored by congregations of The Lutheran Church—Missouri Synod are interested in cooperating in the re-design of the education data program provided by the national center for education statistics. At this time we are not providing a formal paper for consideration in the first synthesis, but we wanted to be sure you were aware that we wish to join in the re-design and in the program itself.

It is helpful for us to know approximately how many non-public schools exist at what levels (preschool, elementary or secondary), how many children they serve, and how many teachers and administrators serve them. It is also helpful for us if we can separate The Lutheran Church—Missouri Synod schools from the other schools in your non-public school survey, and that we can compare their responses with those of the other church and non-church oriented private schools. It would also be helpful if we could compare data with the public schools.

Although we collect and disseminate rather extensive data on the schools of The Lutheran Church—Missouri Synod, receiving specific reports from over 95% of our schools, we are very interested in cooperating in this venture. We are eager to provide data for important surveys, such as the private school survey. In return we appreciate receiving the results of that survey so that we can continue to improve our schools.

It is important that the number of teachers in our schools be counted in the survey of teacher demand and shortage. Frequently the non-public school teacher demand and shortage is quite different than that found in the public schools. Information comparing both types of school would be appreciated.

One of the growing agencies in the schools sponsored by our church is extended daycare. This may become a service offered by public schools in the near future if federal financing should become available. I believe that information covering those schools which provide extended daycare before and after school would be important to be added to your statistics.

If I can help any further or if you have any questions about our data or data collection, please feel free to contact me.

Serving the Master Teacher,

Carl J. Moser

Carl J. Moser, Associate Secretary
Elementary and Secondary Schools

c.c. Dr. Vic Constien
Dr. James Boldt

DATA ON VOCATIONAL EDUCATION:
Problems and Recommendations

prepared for
National Center for Education Statistics
U.S. Department of Education

by

The National Center for Research in Vocational Education
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June 20, 1085

INTRODUCTION

The Carl D. Perkins Vocational Education Act (P.L. 98-524) continues the information systems established by the 1976 amendments to the Vocational Education Act of 1963 (P.L. 94-482): a vocational education data system and the National Occupational Information Coordinating Committee. By these continuations Congress has reiterated its long-standing interest in better information both to assess the effects of the federal role in vocational education and to improve the working of the labor market. Any information systems established for vocational education must attempt to respond to these two objectives, but it is doubtful if any one system can do both.

The initial attempt to fashion such a system by the National Center for Education Statistics (NCES) failed because it tried to do too much. The original Vocational Education Data System (VEDS) attempted to provide information both for policy and for labor market purposes at a level of detail that local and state sources could not supply with acceptable accuracy. The internal and year-to-year inconsistencies in the data assembled by VEDS led the Office of Management and Budget to stop the collection of 1983-84 data.

NCES is currently trying to design a new "national vocational education data reporting and accounting system" which will comply with the mandates in the Perkins Act (Sec 421). These mandates are much the same as those in the 1976 amendments except there is a greater emphasis on special populations and on the use of sampling to collect data. This paper is intended to assist NCES in this process. It reflects the ideas of those staff members of the National Center for Research in Vocational Educationl who have worked most closely with the available national data on vocational education. First the problems that the original VEDS encountered are reviewed. The paper then presents recommendations for improving the operation of future systems and the utility of the data they collect.

Problems with the Old VEDS

A 1979 report by the National Center reviewed the early implementation of VEDS and concluded:

VEDS future is still uncertain.
. . . to the degree VEDS is implemented, vocational educators and decision-makers at every level will have a knowledge of who enrolls in vocational education programs, what happens to them afterward, and what it costs in the kind of detail long needed, but never before available. The extent to which it is implemented will depend upon the decisions of thousands of local and state administrators as they attempt to supply information in the form that VEDS requires (pp. 64-65)

By 1984 the uncertainty had been removed. VEDS as NCES had originally tried to implement it was stopped by OMB. VEDS had generated data at a level of detail not previously available, but the data were not consistent or credible. Comparisons of VEDS data to other sources yielded in a few states vocational enrollments that exceeded total secondary enrollment. Year-to-year changes within states in program enrollments of 50 to 100 percent were not uncommon. It would be easy to attribute the poor quality of these data to resistance or ineptitude among the data providers but more fundamental problems underlie most of these reporting difficulties.

Definitions

The primary difficulty at the secondary level is definitional. What criteria should be used to define vocational students? The quick answer is course enrollment: Students who take vocational courses are vocational students. By this definition, however, virtually all secondary students are vocational. (Campbell, Orth and Seitz (1981) have shown that over three-fourths (78 percent) of students take one or more courses designed to teach skills for paid employment. If consumer and homemaking and industrial arts courses are included, over 90 percent of students take at least one vocational course (Meyer 1981, NCES 1984).

Another technique frequently used is to ask students to classify themselves as to their main course of study. When comparison are made between self-report and other classifications made by administrators (Fetters 1975) or from an analysis of transcripts (Campbell, Orth and Seitz 1981) approximately one-third disagreement between the sources is found.

If additional criteria are applied to course taking data, such as total number of courses, areas of concentration, and the grade level at which the courses were taken, it is possible to distinguish those who appear to be

preparing for entry into identifiable occupations from those who appear to be taking vocational courses for exploratory or avocational reasons. This is the approach that Campbell, Orth and Seitz (1981) followed and it enabled them to identify five discrete patterns of participation in vocational courses. These patterns distinguished between those who seem to be preparing for employment and others who took vocational courses without appearing to have employment as an objective.

The Campbell, et al. approach is applicable when students have completed or left high school and complete information is available on the courses they had taken. It is less appropriate for classifying students while they are still in high school. A student may, for example, take agricultural courses in the ninth and tenth grade, switch to auto mechanics in his eleventh grade and to carpentry in the twelfth grade. Depending on when the student was counted in his high school years, he would be classified in three different program areas. The Campbell et al. decision rules would classify such a student as a concentrator-explorer--one who initially appeared to follow an area of specialization but who left it to sample other occupational areas.

Reporting System

A second major problem the old VEDS encountered was the varied and decentralized nature of the system that generated the VEDS reports. The VEDS forms were distributed to the states. The information that was aggregated and reported on those forms was collected from local educational agencies by a variety of means. A few states virtually duplicated the VEDS forms and required the local agencies to complete them. Some states relied on individual student records which were completed at the local level and aggregated at the state level. Most states, however, tried to adopt their existing information systems to supply the information required by VEDS. The success of this approach varied widely across states.

Relying on such a decentralized system requires very good communication from the federal to the state and from the state to local levels. Even when the communication is good, there is an inevitable time lag between the initiation of a request at the federal level and the response at the local level. Any changes in the request, and there were many in VEDS brief history, compounds the communication difficulties. The repeated message that National

Center staff received when they contacted VEDS coordinators in the states was to stabilize and simplify the system. Of the two stability is probably more important than simplification.

Special Needs Populations

Vocational educators have had difficulty in developing accurate ways to identify disadvantaged and handicapped students for reporting purposes. These difficulties stem primarily from the discrepancy between the way special populations are served in schools and the way they are defined in legislation. The Perkins Act, for example, does not limit the definition of disadvantaged to income. It includes individuals "who have economic or academic disadvantages and who require special services and assistance in order to enable them to succeed in vocational education programs." [Sec 521(12)]. Even if the definition were limited to family income, public schools are reluctant to request such information. On those occasions when it has been requested, the schools have encountered resistance and protests. Consequently schools have had to rely on proxies of disadvantaged status, such as eligibility for free or reduced price school lunches. Even with such proxies, the names of those eligible are not widely shared and often are not available to the individuals responsible for completing the local forms that are aggregated for VEDS.

The existence of an individualized educational plan should be a clear indicator of whether a student is handicapped. Vocational administrators often claim, however, that many handicapped students are mainstreamed in vocational classes without the teachers or the administrators ever being informed of the students' handicaps. This is especially true among learning disabled and speech impaired students who constitute approximately two-thirds of all handicapped students. Their handicaps are less obvious and often less of a detriment in vocational classes. Furthermore, by the definition contained in the Perkins Act [Sec 521(15)], these students must require special education and supportive services to succeed in regular vocational classes to be considered handicapped. A literal interpretation of this definition means if they are not receiving special services, they should not be reported as handicapped.

Recommendations

This brief review of the major problems encountered by the old VEDS argues for a division between data collected primarily for policy purposes and data for labor market information. Most data for policy purposes can best be collected with special studies conducted on a sampling basis. Accurate data on program completers for the Occupational Information System, however, requires a census, a complete enumeration of the population of interest.

Data for Policy

Policy questions are basically concerned with who is served, how they are served, at what cost, and with what effects? Data to answer these questions can best be collected with specially designed questionnaires from representative samples of schools. The two on-going longitudinal studies of NCES and the one currently being planned can provide much of the needed data. Analyses of data of this type can provide far more precise information on the characteristics of vocational students, their secondary and postsecondary educational experiences and subsequent work careers than any aggregate reports.

The use of high school and postsecondary transcripts to define varying patterns of participation in vocational courses is recommended. Such a practice will deal with the definitional problem that plagued the old VEDS. The collection of original data from respondents in selected schools overcomes the difficulties of using the varied educational reporting systems in the separate states to generate the data.

Future longitudinal studies should be supplemented to provide more information on the educational process. Indicators of the educational process within vocational education could include:

- Student recruitment, selection
- Sources of curriculum
- Use of class time
- Relevance of equipment to that being used by employers
- Contact with business and industry
- Background of instructors, most recent experience in occupational areas they teach

Information for some of these indicators could come from the students as well as from teachers and administrators. Cost information can be obtained

from the financial reports filed with the Office of Vocational and Adult Education.

Labor Market Information

Public vocational education is the major source of information on the supply of new workers for the Occupational Information System developed by the National Occupational Information Coordinating Committee. To provide this information at a level of detail sufficient for state and local planning decisions requires a census of all students who complete or leave vocational program after attaining a competency level judged suitable for paid employment in specified occupations. To attempt to provide these data on a sampling basis would require so many primary sampling units that the costs of collecting the data would be prohibitive.

It is recommended that instructors in public vocational programs complete a standardized form for each program completer or leaver. These instructors are in the best position to make such judgments on the competencies of their students. The form the instructors complete should contain background information on the sex, age, race/ethnicity of the students,[2] the program area in which trained and whether or not the individual attained a competency level suitable for employment in specified occupations. Such a report would deal with the problem of defining a program completer or leaver which is especially troublesome at the postsecondary level. Most postsecondary students do not enter a specified program. They take one or two selected courses to meet personal needs. Many of them are employed at the time they take these courses.

The forms instructors complete would be submitted at periodic intervals by local educational agencies to their state offices. At the state level, the forms would be aggregated for use in the state occupational information system and a cumulative report made each year to NCES. The National and State Occupational Information Coordinating Committees would like program completers to be reported at the six digit level according to the Classification of Instruction Program (Malitz 1981) code. This level does not reflect the way most vocational programs at the secondary and postsecondary level are offered. These programs are designed to provide preparation for employment in a number of related occupations. To require reporting at the six-digit level forces individuals to make arbitrary choices that cause unreliability in the data.

The six-digit level may be appropriate for some short-term retraining or upgrading courses, but for most longer-term vocational programs it is too specific.

The total number of programs completers reported by public vocational programs should not be entered directly as data on the supply of skilled workers. Campbell, Gardner and Winterstein (1984) have found that less than half of secondary students who complete extended vocational programs actually seek employment immediately after high school. Many go on for additional post-secondary education. The results of this and future research should be used to adjust the supply data for the Occupational Information System so that the completer figures more accurately reflect those who actually seek employment.

FOOTNOTES

1. In subsequent discussion National Center shall refer to the vocational center and NCES to the statistical center.

2. These data would be for policy not labor market purposes.

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Suggestions For The NCES Redesign Project

A Paper Submitted By

The
National Education Association

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Suggestions For The NCES Redesign Project

The National Education Association (NEA) is entering the information age with a lack of information. In a nation accustomed to numbers, this statement seems absurd. After all, public and private collections of educational data exist. Statistics bombard the education market weekly. The public press turns out bales of educational reports yearly.

All of this information should provide a clear picture of the status of education in this country. It should provide sharp reflections of the way education is changing. It should also help answer with increasing sophistication the many questions of cost, benefit, and quality. Available information, however, does not reflect well the educational landscape.

Bringing education into sharp focus is as difficult today as it was twenty years ago. The need for a sharp focus, however, is perhaps greater today than it was in the past. Government regulation of education has increased. State funding for education has increased. The number of students enrolled in schools is increasing. And new measures to reform education are everywhere present.

All of these changes carry with them a demand for more and better information about education. Yet the current supply of data has not kept up with the demand, and educators have reason to worry. If the demand is not met, then future policy will likely be based on a murky picture. Furthermore, we will not know with any certainty what impact efforts to reform education have had.

The redesign project of the National Center for Education Statistics (NCES) offers a partial but significant solution to the

information problem. The Center's resources, capabilities, and professional reputation are ideally suited for the data-collection efforts needed in education. Although the NEA does not believe NCES can or should solve all the information problems, we do believe it can solve some of them. For this reason, the NCES redesign project is of major importance, and the NEA is pleased to be involved.

NEA suggestions for the NCES redesign of its elementary and secondary education data program are organized below under five categories suggested in NCES guidelines. The categories are: Issues and Data Needs; Data Modifications; Importance of NCES Series; Data Deletion; and Relevance, Quality, and Utility.

Issues and Data Needs

Today, our national self-perceptions of education are regularly confirmed or challenged by statistics on many matters. Whether the meanings read into the data are reasonable or fanciful, the numbers provide a basis for popular and specialized discussion.

The NEA expects official numbers, especially those that appear in series, to play an increasingly prominent role in policy deliberations. Among the many issues likely to be discussed in the future, several noted below seem particularly amenable to NCES collection efforts.

Effective Schools

Issues of quality education will likely expand to include recent effective schools research. Subjects of interest can be expected to include characteristics of school organization, school governance, school administration, public expectations for schools, federal and

state regulations, and local policies.

The current NCES data program will not provide sufficient support for the effective schools issue. The following revisions should help strengthen the data base:

- Add to both the public and private school surveys data elements pertaining to the school characteristics of organization, governance, administration, expectations, regulations, and policies. Suggestions for such elements appear in Tables 1 and 2 at the conclusion of this paper.

- Consider expanding the NCES program to include case studies, field studies, policy reviews, historical research, and additional surveys to expand the scope and detail of effective schools data.

Equity

Since World War II, numerous policy changes concern the issue of equity. School busing (to adjust the numbers of white and black students) and job quotas (to ensure the efficacy of affirmative action) are but two examples.

Equity issues pertaining to race and sex will likely persist. Issues pertaining to age and ethnic origin will likely grow. The following suggestions anticipate the demand for more detailed data where they are not already gathered:

- Refine the variants of Spanish ethnicity to include Mexican American, Puerto Rican, and Cuban for all NCES surveys.

- Refine the variants of Asian ethnicity to include Pacific Islanders, Japanese, Chinese, and Vietnamese for all NCES surveys. Consider using the U.S. Census item for this refinement.

- Add the ethnic category of American Indian and Alaskan Native for all NCES surveys.

Public and Private Schools

A broadened perspective on schooling is evident in current policy discussions. This perspective includes K-12 schools in the mixed public-private system of schooling, pre-primary schools, and adult education and training programs in both public and private sectors.

This perspective raises many questions about public and private schools: how they are similar, how they are different, and what they can learn from each other. The following redesign suggestions anticipate a continued and broadened public-private school debate:

- Add to the Sample Surveys component a Pre-Primary School Survey designed to gather information about the location, organization, program, governance, finance, employees, and students of these schools.
- Align the data elements in the Private School Survey and Public School Survey so that the two surveys are comparable. Specific suggestions for revisions appear in Tables 1 and 2.
- Expand the scope of data collected for both the private and public school surveys. Suggestions for expansion appear in Table 2 concluding this paper.
- Add to the Sample Survey component a survey or to the Other Agency Data component survey items that track the magnitude and growth of adult education and training programs in both public and private sectors.

School Finance

Limited resources require that money be spent on education wisely at the local, state, and federal levels. Current revenue and expenditure data seriously curtail the kinds of questions that can be asked and answers that can be explored. Because the demand for cost-effectiveness studies will likely increase in a period of limited resources and fiscal restraint, the need for more detailed revenue and expenditure data will

grow. The following suggestions for NCES revision can ease the need for better fiscal data:

- Provide greater revenue and expenditure detail for both private and public schools. See Tables 1 and 2 for specific suggestions.
- Add data for incentive plans and salaries of public and private school administrators and educational support personnel.

Student Outcomes

Statistics are regularly published on such fundamental matters as reading and literacy rates, achievement rates, and dropout rates. The inadequacy of measures for each of these rates is well established and well known. The following suggestions call for a major revision of student outcome data:

- Expand and standardize the definition of student performance outcomes to include more knowledge areas. Consider such categories as linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, and personal knowledge.
- Develop measures appropriate for an enlarged view of student outcomes. Consider the possibility of building upon the diversified measures developed for the National Assessment of Educational Progress.
- Collect fall and spring enrollment figures.
- Standardize definitions of dropout, attendance, and literacy.
- Convene an advisory group to study methods suitable for measuring dropout rates and student mobility.

Teaching Quality

For a number of years, fairly simple models directed the collection of data pertaining to teaching quality. For example, some models were

constructed on the metaphor of an assembly line with students and procedures standardized. Some models viewed students as passive agents over which teachers had absolute control. Other models, including those underlying several reform proposals, take an economic view of teachers and teaching.

Accumulated research and the experiences of teachers indicate that all of these models misrepresent reality. For this reason, the issue of teaching quality will likely become more complex as models for thinking about quality change. Suggestions consistent with this change include:

- Add data elements for each of the following known components of effective teaching: personal characteristics of teachers, teacher competence, teacher performance, student learning experience, student learning outcomes, teacher credentials, school context, characteristics of students as a class, and characteristics of students as individual learners. Suggestions for data elements appear in Tables 1 and 2.

- Consider convening an advisory panel to develop and refine over time measures of teaching effectiveness.

- Consider expanding the NCES program to include case studies, field studies, policy reviews, historical research, and additional surveys to expand the scope and detail of data for the components noted above.

Data Modifications

NCES data bases should be expanded to provide a broader and more detailed source of information about K-12 education. Specific recommendations for expansion appear in Tables 1 and 2. Table 1 identifies data elements that need to be added to existing data collection components. Table 2 identifies data elements that should be collected through additional

surveys. Additional surveys are needed to provide a more comprehensive assessment of the setting, characteristics, practices, personnel, conditions, and outcomes of K-12 education at the local level. Suggested data elements in the table would be useful in providing estimates of:

- o A wider array of local conditions related to school, teacher, and pupil performance.
- o Variation within schools, districts, regions, and the nation in the presence of conditions likely to influence education quality.
- o Many dimensions of education practice at a given time and place.

A major desirable outcome of expanding the NCES program will be an improved data base for professional, governmental, and public decisions regarding ways to improve the quality of K-12 education. Such data can contribute to a better understanding of the complexity, variation, and similarities of K-12 education throughout the nation. The data can be used to study problems, opportunities, and decision options related to improving education. The data can also be used to study departures from traditional approaches to funding, accrediting, evaluating, and changing public schools.

The utility of NCES data bases can also be increased if the following criteria are consistently met:

- o Conditions in education are accurately measured and reported.
- o Data are collected with instruments that meet high technical standards.
- o Data are collected under normal conditions.
- o Data are made available to users in a timely fashion.

Importance of NCES Series

Statistical information produced by NCES shapes thousands of decisions by government and nongovernment users alike. The need for these data has escalated during the eighties as researchers, legislators, and the public focus on issues of educational improvement.

The importance of NCES' statistical programs has grown in conjunction with this expanding need. Consumers of education data have come to view NCES data series--all series--as accurate, non-biased sources of information with which to address an increasingly complex education enterprise. While each NCES data series has a wide audience of users and may be considered as essential to the planning and design of public education policies, the Common Core of Data may represent the most heavily used series of public school statistics.

The Core is the cornerstone of educational information in the United States. No other public or private institution collects and maintains public education data to the extent that NCES does via the Core. Several groups--including the NEA--conduct data collection activities which parallel the Core in some respects, but these efforts pale in comparison to the NCES program. For this reason and others, the support and maintenance of the Core component should be a national priority.

The Core represents the most basic data series within the NCES. It enables assessments of what was, what is, and what will be in a statistical sense. Annual updates to Core surveys provide basic statistical information on public schools, their pupils, personnel, and finances.

This information, by school, LEA, or state, serves as an invaluable tool for measuring change, signaling trends, and designing future education policies. Data from the Core are used as benchmarks, goals or objectives, and measures of success and failure. Simply stated, the Core allows us to "know things" about public education, and thereby allows us to "do things" about public education.

The Core stands ready to support basic research, budgeting decisions, and programmatic planning. It can uncover questions and issues requiring further investigation. Data collected through the Core, then, are of immense value in and of themselves, but they also serve as means to the achievement of numerous goals.

Educational issues of concern to government officials, educators, and the public throughout the remainder of the twentieth century will call for education information as provided through the Core. Indeed, selected variables from the Core can and have been used to help assess the outcomes of recent reform initiatives in various states. This evaluative process is vital to the prospects for meaningful reform of public education offerings.

Data Deletion

The NEA recommends against any reductions or elimination of existing NCES data series. We believe that all the series and items are vital to the interests of the educational community.

Relevance, Quality, and Utility

The summary documents and data tapes provided by the NCES have been useful to the NEA. NCES' access to school and school district data

and their data collection processes cannot be matched by any nongovernmental organization. NEA believes that the work of NCES is vital to our own efforts in service to the education community. NEA does have specific recommendations for improving the data, the collection process, and the dissemination of the data in order to increase the relevance, technical quality, and utility of the data programs.

The relevance can be improved by providing more timely data, access to more raw data, consistency between public and private school surveys, and consistency in surveys over years. The speed with which the data are made available to the public is critical. The availability of the raw data, on tape, permits NEA and others to perform their own analyses. The use of the same questions for public and private school surveys permits more extensive matching and comparing of school systems on a wide variety of attributes. The same issue of consistency applies to surveys repeated over the years. The use of the same questions permits an analysis of trends.

The technical quality can be improved by ensuring complete and accurate documentation, more complete editing of the data, and increased efforts to eliminate missing data. Data provided on tape should be thoroughly reviewed for errors in record descriptions and data documentation. More comprehensive edit checking would reveal inconsistencies in the data. For example, the computation of ratios between certain items such as enrollment and teachers would highlight unreasonable data configurations that do not appear in individual items. The use of random audits for individual schools and districts may reveal ambiguous data.

or areas of difficult data gathering. For example, a review of individual districts may reveal that the definitions of staff categories used by districts do not match those of NCES. Efforts to revise or to promote use of those codes could then be undertaken. The elimination of missing data could provide more accurate summary data.

The usefulness of the data can be improved by providing more documentation on the availability of NCES data and more contact with NCES personnel for future survey planning. NEA needs to know what data are available from NCES, in what forms the data are available, and when the data are released. Increased contact between NCES and the user community will enhance the use of present data and the planning of future surveys. The process for future survey planning that is now being implemented is an excellent step and should be maintained.

Table 1. Summary of NEA Suggestions for Additions and Changes for NCES Data, By Census and Survey

NCES Component	NEA Suggestions
Common Core of Data	
1. Public School Universe	o Add spring membership. o Add full-time-equivalent classroom teacher by sex and elementary/secondary level.
2. Local Education Agency Universe	o No additions or changes.
3. Local Education Agency Nonfiscal Report	o Add fall membership by grade. o Add number of full-time-equivalent LEA employees in all employee categories. o Add number of full-time-equivalent teachers by individual grade. o Add presence or absence of collective bargaining agreements for teacher, administrator, and educational support personnel groups.
4. Public School District Finance Report	o Provide revenue by source consistent with NCES handbook on financial accounting. o Provide expenditure by function consistent with NCES handbook on financial accounting. o Provide other uses of funds by category consistent with NCES handbook on financial accounting. o Provide special exhibits by category consistent with NCES handbook on financial accounting.
5. State Aggregate Nonfiscal Report	o Add fall membership by individual grade.

Table 1 continued

NCES Component	NEA Suggestions
Nonfiscal continued	o Add full-time-equivalent employees by major assignment category, by state. o Add number of high school graduates.
6. State Aggregate Fiscal Report	o Make revenue, expenditure, other uses, and special exhibits detail consistent with revisions suggested for district finance data. o Add average daily attendance. o Add state law defining average daily attendance. o Add state aid formulae.
Sample Surveys	
1. Private School Survey	o Add fall membership by individual grade. o Add total membership. o Add design capacity of school. o Add ethnicity enrollment as percent of total enrollment. o Add grade span. o Add teacher college credits by subject matter field. o Add information on additional training for teachers. o Add personal characteristics of teachers. o Add membership by major subject. o Add average SAT/ACT scores and percent tested by school. o Add teacher incentive plans. o Add teaching assignment and classroom enrollment for teachers.

Table 1 continued

NCES Component	NEA Suggestions
Private School continued	o Add teacher hours per week by activity. o Add number of volunteers by activity category.
2. Public School Survey	o Add fall membership by individual grade. o Add highest degree earned by teacher. o Add number of years experience by teacher. o Add admission requirements, disciplinary policies, length of day and school year, and other characteristics consistent with private school survey.
3. Recent College Graduates Survey	o Develop better descriptors for this data set. o Add SAT/ACT scores. o Add academic program/preparation detail. o Add more demographic detail.
4. Survey of Teacher Demand and Shortage	o Provide rationale for number of private schools in survey sample. o Add number of teachers leaving and why. o Add number of full-time-equivalent teachers by grade. o Add class size by type of class. o Add number of budgeted positions. o Add number of needed positions. o Add descriptions of recruitment and employment practices. o Provide rationale and greater detail for teacher incentive plans.

Table 1 continued

NCES Component	NEA Suggestions
5. High School And Beyond	o Add descriptions of teacher and student recruitment and placement policies. o Add more male guardian questions on the parent questionnaire--whether he was present during pre-school years, worked, etc. o Add community descriptive elements such as racial/ethnic mix, community size.
6. Library/Media Center Survey	o Add number of books, materials loaned. o Add number of computers, programs available.
Other Agency Data	
1. Preprimary Enrollments of Children 3 - 5 Years Old	o If this survey is repeated, add length of program day, program year. o Add enrollment and placement requirements for students. o Add health care services descriptions. o Add state law governing provision of pre-primary education. o Add state law governing attendance. o Add more program description.

Table 2. Recommended Data Elements By Major Category For New Or Expanded NCES Sample Survey Component

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A. Students
1. Fall membership by grade
2. Enrollment by subject matter
3. Students qualified for special programs
4. Students enrolled in special programs
5. Average SAT/ACT scores and percent of students tested
6. Ethnicity status and percent of total enrollment
7. Student transfers
8. Student dropouts
9. Student attendance
10. Experience with violence
11. SES distribution

B. Teachers
1. FTE by school level
2. FTE by category (regular, special education, etc.)
3. Assignment type (department head, chair)
4. Tenure status
5. Job differentiation status (Master teacher, mentor teacher, etc.)
6. Activities in day
7. Highest earned degree
8. Years of experience
9. Education specialty in college
10. Salary average per school
11. Salary intervals per school
12. Additional training
13. Credits by subject, continuing education
14. Marital status
15. Sex
16. Age intervals
17. Race

C. Administrators
1. Highest degree earned
2. Years experience
3. Education specialty in college
4. Salary average per school
5. Marital status
6. Sex
7. Age intervals
8. Ethnicity
9. Administrator salary schedule
10. Administrator salary by intervals

Table 2 continued

D. Educational Support Personnel
   1. Standard definitions and classifications
   2. FTE by job category
   3. Compensation plan, fringe benefits
   4. Job qualifications by category
   5. Staff development practices
   6. Evaluation practices
   7. Supervisory practices
   8. Demographic data

E. Finance
   1. Revenue by source (include private and federal grants)
   2. Expenditures by major assignment category: compensation and fringe benefits
   3. Expenditures by major classification

F. Programs and Practices
   1. Length of school day
   2. Length of school year
   3. Programs offered
   4. Class size by class type
   5. Pupil load
   6. Admission policies by type of school
   7. Teacher activities by percent of time
   8. Teacher incentive plans
   9. Teacher education programs
   10. Teacher support programs
   11. Teacher evaluation process
   12. Discipline policies
   13. Job differentiation plans
   14. Standardized testing programs
   15. Grading policies
   16. Span of teacher authority

G. Classroom
   1. Classroom size
   2. Classroom space
   3. Books and materials
   4. Audio-visual equipment, high tech equipment
   5. Available supplies

H. School Administration
   1. Source of authority (public, private: religious, nonreligious)
   2. Structure (single school, state, private network)
   3. Location of school (city, suburb, rural)

NGA COMMENTS ON NCES

REDESIGN OF THE ELEMENTARY/SECONDARY

EDUCATION DATA PROGRAM

Introduction

A majority of the governors indicated in their 1984 and 1985 state of the state messages that education continues to be a top priority. The general theme of the 1984 and 1985 state initiatives has been to improve the quality of the education system. The governor as the state's chief executive officer guides education policy in primarily three ways. First, the governor performs a leadership role in setting the agenda for and promoting activities on educational improvements/reform. Second, the governor is responsible for developing state budget requests for education expenditures. In many states the education budget accounts for as much as 30 percent of the total state budget, and third, many governors are responsible for appointing state education board members.

As leaders in setting the state education agenda, governors in 1985 planned to focus primarily on initiatives to improve the teaching profession, address student quality through improvements in math and science instruction, and examine and increase the financing of education. This represents a shift to more specific strategies from the broader initiatives of the past few years to link educational reform and improvements with other state policies directed at promoting state revitalization and economic growth. Table 1 indicates that in 1985 the largest number of states expressed an interest in the issues concerning incentives in the teaching profession. Twenty three states emphasized teacher career ladders and 21 states emphasized teacher salaries. Of the remaining top ten issues, 4 are related to school administration, 3 of these to financing mechanisms and 1 related to school administration reform. Another four issues are related to student quality including student competency and child abuse. In comparison, in 1984 the governors in 29 states emphasized their interest in the broader aspects of building stronger partnerships between education and business/industry. Private sector linkages were seen as a means to accomplish the goals of preparing a better-educated future work force and thereby contributing to the state's future economic growth potential.

Table 1

Top Ten Education Issues Cited in the 1985
State of the State Messages

Issue Area	Number of States Citing
Teacher Career Ladder and Development	23
Teacher Salaries	21
Math/Science Instruction	20
Finance Formula	20
Economic Development, Voc. Ed., and Tech.	19
School Administration Quality and Reform	18
Funding Increase	18
Local School Aid	18
Student Testing and Competency	17
Child Abuse	17

Source: Governors' State of the State Messages, 1985 (Forty-seven state messages reviewed.)

During the 1980's, more than 30 states have enacted major financial reforms of elementary/secondary education. In 1984, 25 governors planned to enhance education efforts by providing more fiscal resources and 9 governors proposed tax increases to provide adequate resources for the improvement of their states' educational system. The majority of the funding increases proposed (20 states) was planned for use in raising teachers' salaries while 9 states proposed funding for improvements of school facilities and equipment. Ten states proposed increasing state aid to local schools systems. In 1985, 20 governors were interested in finance formula issues, 18 governors plan to enhance education efforts by providing more fiscal resources and 18 governors emphasized local school aid. This represents a significant shift from the 1970's when more than 28 states enacted major financial reforms for elementary and secondary education to equalize fiscal resources among school districts in order to relieve property taxes and legal challenges.

State Policy-Makers Data Needs

In order to perform education policy setting functions, states need to plan, develop, implement and evaluate education initiatives. For these purposes a combination of state and national data are useful. State produced education data which are designed to meet specific state needs provide the core for state education policy-making. All state education policymakers rely heavily on information from the State Education Department but also on local school districts and on education associations. However, national trend data and consistent and accurate data from all states for macro comparison purposes is of key interest as well.

The top ten priority issues as identified in the governors' state of the state messages can be used to provide a framework for a discussion of data

needs. The list of the top ten education topics is provided to give a picture of the current education topics of interest to governors. We are not suggesting, however, that in trying to determine the needs of the data system for elementary/secondary education for the next 10 years, that currently popular issues such as those identified in Table 1 be used exclusively as a barometer of long-term data needs. This list, however, does reflect back to some broader core issues that fluctuate little over the long run.

The education citations in the state messages can be organized into three general issue areas which include improving student, teacher and school administrative quality. Table 2 illustrates this organization and ranks the topics in each of the three areas. As can be seen from this table, the primary topics of interest to improve student quality concern basic education focusing on technology and technical skills. Other areas include competency measurement, child care and well being, student groups at the extremes (dropouts and gifted) and special-need students; and community behavior that affects student outcome. The issue of graduation requirements ranks last. The key issue in improving school administration is school finance. Other issues include general management initiatives. Of somewhat lesser interest is the issue of teacher shortage.

The list of issues in Table 2 can be examined in terms of more specific data items to determine which are of interest to state education policymakers. The Education Policy Consortium developed a preliminary list of potential data items of interest to consortium member associations and their constituencies. These data items listed in Table 3 are organized for this paper into four categories including student data, teacher data, school data and finance data. The data items related to the governors' top ten priority issues are indicated with an asterisk as are the items generally available through NCES.

In the first area in Table 3, student data, the governors are not timid to talk about measurement of educational outcomes across states. As more states move toward preparing a better educated workforce to encourage economic development the issue of identifying student outcomes emerges as more than assessing student achievement. More data than test scores, such as the SAT, are needed to determine post-school experiences. The education process should be traced from start to outcome to determine what happens to the in-school population upon leaving an education program (by graduating or dropping out), what are their post-school labor market experiences in terms of employment, unemployment and earnings, and whether they re-enter school at some future time. In the future, student outcome measures may be one set of evidence used in evaluating education reform policies currently being initiated.

Longitudinal studies such as the High School and Beyond Survey are one way of determining outcome measures. This is one of the few surveys that capture data from students on a longitudinal basis. It seems, because of its somewhat unique nature that this questionnaire should be a priority to be maintained, improved in terms of data quality and potentially be expanded to gather more data, in terms of content and sample size to make the data more state specific.

In the second area, outlined in Table 3, teacher data, the governors are currently interested in examining the teaching profession as a primary factor in improving the education system. Incentives to keep and attract quality teachers,

Table 2

Summary of Education Initiatives

Cited in the Governors' 1985 State of the State Messages

A. Topics Cited to Improve the Quality of K-12 Students

Rank	Topic	Number of States
1	Math & Science Instruction	20
2	Economic Development, Voc. Ed. & Tech.	19
3.5	Testing and Competency	17
3.5	Child Abuse	17
5	Child Care & Early Childhood	15
6	Dropouts & Discipline	13
7	Gifted	12
8	Computer Literacy	11
9	Community & Parent Involvement	10
10	Special Ed. & Handicapped	8
11	Graduation Requirements	4

B. Topics Cited to Improve the Quality of K-12 Teachers

Rank	Topic	Number of States
1	Career Ladder & Development	23
2	Salaries	21
3	Certification & Evaluation	11

C. Topics Cited to Improve Quality of K-12 School Administration

Rank	Topic	Number of States
1	Finance Formula	20
3	Administrative Quality & Reform	18
3	Funding Increase	18
3	Local School Aid	18
5	Management/Class Size	13
6	Facility/Equipment/Text Books	11
7	Teacher Shortage	4

Source: Governors' State of the State Messages, 1985. (Forty-seven state messages were reviewed.)

Table 3
Preliminary List of Education Policy Consortium
Identified Data Items Related to the Top Ten Governors' Priorities

Topic	Data Item Description	Governors' Top Ten Priorities	NCES Data Available
STUDENT DATA	Achievement	*	*
	test scores		
	school grades		
	promotion record		
	Attainment	*	
	drop out rates		
	post drop out experience		
	graduation rates		*
	post graduation experience		
	In-School Behavior		
	attendance/truancy		
	vandalism		
	suspension/expulsion		
	course enrollments	*	*
	attitudes		
	Community Behavior		
	voter registration and participation		
	Individual Characteristics	*	*
	demographic (age/race/sex)		
	SES background		
	grade level		
	type of school attending		
	migrant/refugee		
	primary language		
	handicap		
	abused as a child	*	
TEACHER DATA	Training/Certification		
	formal education		
	participation in:		
	in-service training		
	pre-service training		
	loan/scholarship availability		
	certification subjects		
	Evaluation of performance		
	classroom evaluation		
	competency test scores		

Table 3 (Continued)

Topic	Data Item Description	Governors' Top Ten Priorities	NCES Data Available
	Compensation	*	*
	pay for performance		
	incentives		
	salaries/benefits		
	Employment Status		
	retention rates		
	reasons for leaving profession		
	working conditions	*	
	years of service		
	course assignments	*	*
	Personal Characteristics		
	demographic (age/race/sex)		
	attitudes		
	academic talents by employed/ leaver		
SCHOOL CHARACTER-ISTICS DATA	Curriculum and Assessment Improvement	*	
	Instructional materials		
	Training		
	Alignment of curriculum within grade, across grade, with assessment		
	LEA and state testing		
	Education indicators other than tests		
	School Improvement	*	
	strategies		
	training		
	planning process		
	curriculum improvement		
	State Role		
	monitoring/accountability		
	technical assistance		
	relationship to local districts		
	Technology		
	Community Involvement/Satisfaction with Schools		

Table 3 (Continued)

Topic	Data Item Description	Governors' Top Ten Priorities	NCES Data Available
FINANCE DATA	State and Local Revenues	*	*
	tax base level and compo.		
	tax rate level and compo.		
	total revenues		
	sources of revenues		
	relief provisions		
	revenue limitation		
	provisions for non-public		
	Expenditures (local)	*	*
	total expenditures		
	total elementary/secondary expenditures		
	expenditures by category		
	cost of special programs		
	student aid categorical vs. formula aid for special student population		
	expenditure limits		
	Federal Aid	*	*
	total amount by state		
	allocation formulas used (federal and state)		
	state/local split		
	administrative services split		
	source of match		
	$ amount of audit except		
	$ amount of carryover		

Source: This preliminary data item list was derived from an Education Policy Consortium meeting, February, 1985.

such as compensation and career ladders are of key interest. Of particular concern is the notion of higher salaries generating more qualified teachers, which if validated, would encourage states to change salary structures, increase the minimum and/or average teacher salaries and establish merit or incentive pay programs. Of lesser interest to governors is the number of teachers employed and teacher shortages. If the profession has attractive incentives, the issue of teacher shortage may be of negligable importance.

The Public and Private School Surveys which both collect information on these topics should be among NCES priorities. The samples should be examined to determine the feasibility of expansion to collect data more state specific. This should be considered in conjunction with the further examination of appropriate state administrative records and a deemphasis on the Teacher Demand and Surplus Survey.

In the fourth area of Table 3, information on school finance has been an issue of interest for a number of years and will no doubt continue to be of interest as efforts to improve the school system are continued into the next decade. While the issue is not a new one, a shifting focus overtime to different aspects of school finance is evident. The equity issue of the 1970's in funding local school districts has shifted to interest in funding formulas, budget increases and increasing teacher salaries. Of interest in the future will be financing issues of public versus private schools. Basic finance information concerning both sectors should continue to be considered a core data element in any elementary/secondary education data system. Particularly in the Private School Survey, attention should be given to the finance questions. To enhance their data base, NCES should also examine the finance data base maintained by ECS.

Data Duplication/Overlap

If the NCES data collections, as presented in Attachment B of the initial correspondence concerning the redesign, are examined by subject area rather than by data collection program some duplication of effort becomes evident. For example, if the topic of information on teachers is examined then it appears from a cursory review that several surveys collect information on teachers in addition to the data available from administrative records. We recommend a thorough review of the Survey of Teacher Demand and Shortage, Recent College Graduates Survey and the Public School Survey to examine duplication. All three ask questions of teachers concerning subject matter assignments. The Public School Survey and the Survey of Teacher Demand and Shortage both ask questions concerning teacher incentive plans. The Recent College Graduate Survey as well as the Public and Private School surveys obtain teacher salary and compensation data.

In addition, there is duplication between NCES and other federal agency collections. For example, the Bureau of Labor Statistics, as part of the Occupational Employment Statistics (OES) program collects data every three years on current teacher employment. Another form of duplication is when information is collected in a survey but is already available in administrative records. Information on the number of new hires and the number of those teachers returning to their previous position from the survey of Teacher Demand and Shortage could potentially be obtained through the Employer's Quarterly Wage and Tax Report of State Employment Security Agencies (SESA).

We would recommend that because of the apparent duplication the Survey of Teacher Demand and Surplus be given a very low priority and reviewed to determine if it should be conducted at all. It seems that the data could be obtained primarily from the BLS OES program, state administrative records and if needed through the Public and Private School Survey. As well, the recent College Graduates Survey should be examined to determine what information is received that can't be derived from College/University and SESA administrative records and/or the Public and Private School Surveys.

Although the area of teacher data seems to have the largest number of separate collections and therefore the greatest potential for duplication, other areas as well may also have inefficiencies. Beyond this one example cited above which needs further examination, we suggest that NCES do a comprehensive review of their data collections across subject areas to explore further efficiencies that could be realized through unduplicated data collection and more extensive use of administrative records. A single collection instrument that obtains relevant data for multiple purposes and users appears to be a far more efficient use of resources than multiple shorter surveys resulting in several sets of incompatable data.

Unmet Data Needs

A data system to remain relevant to users should be flexible in meeting data needs created by the changing nature of our society. Although several unmet data needs can be identified, no priorities have been assigned to these needs by state policy officals. For example, the High School and Beyond Survey traces the post-high school experience of graduates but not of those youth who are not graduating or who have dropped out. This will become an increasingly important topic to determine the experiences of the at-risk population and the impacts of the policy initiatives of the early 1980s. Again, administrative records may be a tool useful in gathering some of this data or it may be necessary to explore collection of these data through the High School and Beyond Survey.

States need to identify education outcomes related to their own labor markets to fully use the data in their own policy development process, because of different industry structures, different rates of growth/decline and different labor market barriers and characteristics. For this reason, states do not find useful national longitudinal education data that only report national estimates, estimates for the 9 census regions and the 7 largest states. Although 6 or 7 states paid to have data collected for a state specific sample, generally there is no state level detail available.

We acknowledge funding limitations and because of this are supportive of NCES efforts that would be more creative in developing arrangements to have states expand their samples. Also NCES should consider expanding the national sample to provide more state specific data.

Another gap is information on career ladders within the teaching profession. Although there is a general lack of this type of information for most occupations, with the emphasis being placed on incentives for teachers, this information is valuable. Methods to obtain this data should be considered

by NCES working cooperatively with the National Occupational Information Coordinating Committee.

Issues That Crosscut Specific Data Programs

The NCES efforts to assure quality data is produced as recommended in the NCES "Research in Statistics" report are critically important. Governors and state policy representatives are seriously concerned about the accuracy of reported data. It is generally acknowledged that there are few validity studies made or audits done on NCES data collections. We therefore strongly support work to develop procedures and strategies for continually assessing the validity of all NCES data programs and encourage NCES to make this a top priority. There are other efforts that would also improve the quality of data; such as developing minimum definitions that would make data consistent across states.

Standardization of Data Needed

NCES data are most useful to state policy makers when comparisons can be made between states and between a state and the national trend or average. For example, the indicators of education status and trends are an excellent vehicle from which comparions can be made if the defintions used across states are consistent. Some states even indicated to us that it would be preferrable to have a less extensive data collection effort that contained more rigidly defined data elements that were released more quickly.

States are very interested in assessing the amount and method of teacher compensation. In a survey of Governors' education policy staff conducted in November 1984 by the State Education Policy Consortium 43 percent of the states responding in the area of teacher quality indicated that the single issue which would be the most important over the next year is teacher compensation and is likely to remain so for the next decade.

In this case, state specific information on the state education budget, current compensation level and structure, the state history of salary increases by local education agencies, comparable personnel costs within the state, the elements included in the compensation package, and teacher characteristics may be used. National information on the current national median teacher salary, whether it is rising/falling and by how much, the variance of each state from the median and where each state ranks compared to others gives the state a relative measure of their teacher salary program against a national indicator and neighboring states. Salary information should be collected in a consistent manner.

Comparative measures that are not based on standardized definitions to guide data collection and that do not include a description of what's reported and what's not reported in the data may lead industry and education policy analysts to erroneous conclusions. For example, consider the detailed comparisons of data across states for the retirement system. In some states, local government pays the employer contribution and in others the state government pays the employer contribution. A state could have relatively higher or lower figures based on who pays for the retirement system and how the data are collected. Another example is enrollment data which, depending on the state, could represent average daily enrollment or a head count.

Numerous other examples exist of data collections where no standard definitions are used and data are not compatible across federal data collectors. An example is the long term debate on how to define a teacher. The BLS/Census and NCES definitions both differ. While we do acknowledge that there are different uses for different types of data, because of the need to integrate and use a variety of data sources in answering policy questions discrepencies such as this make it extremely difficult to accurately interpret the data being examined. Instead of using different definitions in various data collection programs we believe that it is the responsibility of the federal government to use common definitions for data collection.

To overcome the definition inconsistencies such as these that render the data meaningless for the key purpose to which they are used at the state level will require a sustained long-term effort to determine what are the core elements and how they should be collected. While education systems do vary widely across states; it appears that states would welcome common reporting on certain national data elements that would allow valid comparisons to be made.

Fifteen years ago BLS had similar problems with the definition of unemployment. NCES may wish to look at the BLS federal/state cooperative programs
as an example of how national definitions are used particularly with state administrative records. The BLS defines those data elements which are necessary for the national income accounts data. The BLS then contracts with the state to collect data using these standard definitions; using the dollars as a leverage tool.

The BLS as the major statistical agency responsible for labor force statistics has defined the population (16 years and older) into mutually exclusive categories as shown in Figure 1. NCES as the major statistical agency responsible for education statistics, should consider defining the population (0-16 years old) in a similar fashion of mutually exclusive categories. This would help in the development of definitions.

Standardizing data is not done without problems. BLS has been taken to court over the definitions but has won all the cases. Definitional problems should be carefully examined through more extensive collaborative efforts between the federal and state levels. A useful mechanism may be an interagency approach which brings together users and producers such as that of the National Occupational Information Coordinating Committee.

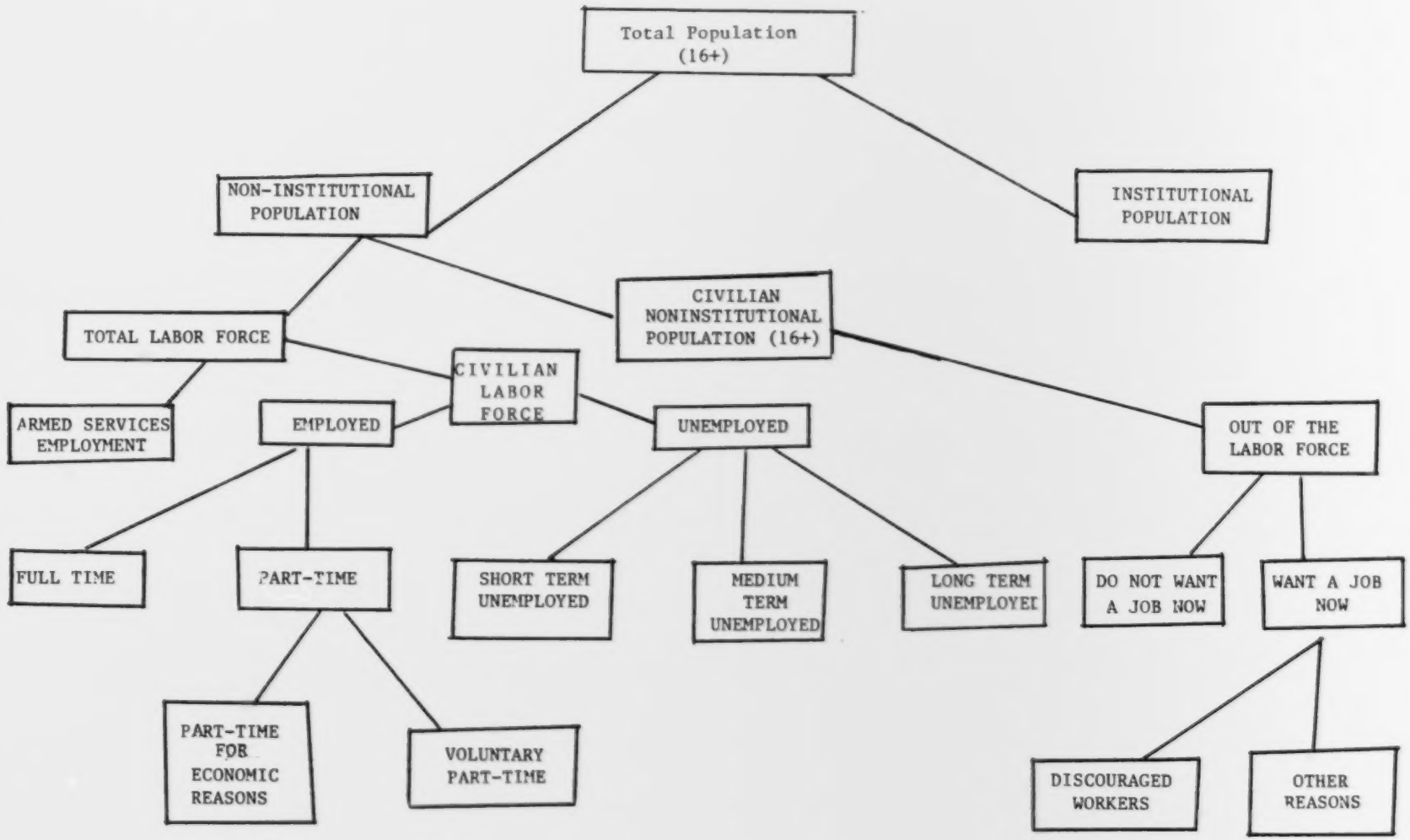
Statistical Agency Coordination

Under the authority of the Federal Paperwork Reduction Act we would recommend you pay particular attention to coordinating education financial data collected through the various programs with the Census Bureau which collects state and local fiscal data through the Census of Governments. The Census Bureau could potentially collect the data for NCES under an interagency agreement or contractual arrangement collection similar to the CPS October education supplement collection.

Other areas where interagency coordination would be appropriate are with the Department of Labor's Employment and Training Administration. Longitudinal

Figure 1

Labor Force Concepts
Used in the
Current Population Survey



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survey data from a variety of sources including the JTPA training programs would be more useful if coordinated among agencies and made more compatible. Under the JTPA, a longitudinal job training survey is conducted using a national sample of individuals representative of youth, all adults and welfare adults conducted on an annual basis. Data are collected on the individuals at 12 months and 24 months after program completion. We would suggest here some sharing of information between NCES and the Employment and Training Administration. There may be questions of interest to NCES which could be added to the JTPA Survey and as well NCES could add questions of interest to ETA to their survey. The coordination of these sources of data would provide an expanded data base for more extensive use and would be a more efficient use of limited resources.

Release Raw Data Quickly

In many situations data are needed quickly for policy purposes. For example, if states want to change their salary level and/or structure in relation to the current national average trend, then data that are several years old are not useful. The early data systems being recommended by the NCES "Research in Statistics" report is one step to address the issue of timeliness. However, states will have limited uses for these data due to the small national sample sizes. State education policy makers would like quicker turn around time on the administrative data submitted to NCES directly by the states. An emphasis on technological initiatives that improve data collection, editing and processing procedures and data release capabilities will aid in shorter turn-around times.

It has been suggested by several state data users that the administrative data collected from the states be made available in raw form to provide earlier access by state analysts. Use of NCES data may well increase if the turnaround time from the point when states report data to the point when NCES disseminates the collective data sent back to states is shortened.

It was suggested by several states that NCES should concentrate less on detailed analysis of state-specific data or inter-state comparisons and more on national trends and a look to future issues. State experts who are familiar with the particular qualities of the area being analyzed and the differences between states should be primarily responsible for this analysis. Interpretation of national data should be conducted based on a set of standards which maintain the integrity of the data.

Conclusion

There is general support for NCES data products and publications in the states although this is not the primary source of data used for state education policy-making. The states as partners with the federal government are committed to the reporting of state/local data under reasonable requirements to various federal agencies such as NCES and national organizations. In some states this reporting activity may require up to 3 to 4 person-months per year. In exploring the return on the state's investment in NCES data and the usefulness of the nationally collected state education data several key issues stand out from a state policy perspective. By far, the most important issues cross cutting a majority of states are that of:

(1) improving the quality of data;

(2) providing comparability of data across states, across data programs, and across data collectors;

(3) the increased use of state administrative records such as those available through the SESA; and

(4) capitalizing on the statistical expertise in other federal government agencies and associations.

NATIONAL SCHOOL BOARDS ASSOCIATION
1680 Duke Street, Alexandria, Virginia 22314
(703) 838-NSBA

June 27, 1985

Mr. Emerson Elliott
Administrator
National Center for Education Statistics
1200 19th Street, NW
Washington, DC 20208-1631

Dear Mr. Elliott:

We are pleased to comment upon the Elementary/Secondary Education Data Program proposed by the National Center for Educational Statistics (NCES). The redesign project is a welcome effort on your part, not only because it is commendable of NCES to consider the need to update its efforts but also (and especially) because we appreciate the dedication and thoroughness with which NCES is seeking counsel and advice from throughout the community of educational statistics users. We hope that this NCES process will serve as an exemplar to other offices of the Department of Education.

The most useful service to local school district policy makers, and to the state school boards associations that assist these local policy makers, is that federal education statistics capture significant trends in a timely way. The current effort is imperfect, in this regard; it catches some but not others. For example, the movements toward magnet schools and toward desegregation are not readily traced in NCES's data, while changes in the nature of the teaching profession are more readily found there.

The next decade -- because of the "excellence movement," the changing demographics of the U.S. population, and the emerging electronic technologies that many hope will improve society at large and schools in particular -- is likely to be an era of change in public education. Capturing trends, in a timely way, will require some reshaping of NCES's inquiries.

In light of this general conceptual background, we respectfully offer the following comments and recommendations:

- We anticipate a continued policy interest in improving the effects of the schooling enterprise. We need to shift our statistical focus more than we have, to assist the public debate about school effectiveness. Certainly the public's interest reflected in the "excellence movement" has been framed in terms of increasing student learning -- not only academic learning measured by traditional tests but also other kinds of learning: The changing nature of employment has prompted attention to thinking skills, computer

capability, job-seeking and job-holding skills. Higher education institutions have expressed concern about levels of writing and study skills. Some of the nation's social ills have focused attention on a gamut of values held by students and graduates, ranging from entrepreneurship to patriotism and racial tolerance to sexual responsibility. The focus on effects of schools should reflect this broad range of learning.

The current NCES program, however, generally focuses its attention on what goes into the schooling process. This historic imbalance has an unintended consequence: the sheer weight of data reported about the number and characteristics of teachers, courses taught, attendance, enrollment categories, family characteristics, et al., leaves the impression that education is more interested in counting our resources than counting our effects. Moreover, the emphasis on statistics about the schooling process assures that process trends will more likely be captured than trends in the effects of education, so that the public debate gets frustrated. We hope that NCES through this redesign project will find new ways to aid the public's interest in the effects of schooling.

- New electronic technologies, and new systems for management and instruction that exploit these new tools, will serve and reinforce this public emphasis on the effects of schooling, in two ways:

  - The arguments for and against uses of computers and other technology will be formulated on the basis that new tools do (or do not) improve the product of the schooling enterprise; and

  - Some of these new tools enhance the ability of school management to gather timely data about the success of the schooling enterprise.

We need data about the uses and impact of technology. There is much talk and some considerable action in the uses of new technology but little useful data. Only market sales data is currently available routinely. The current ad hoc study by the Research Triangle funded by NCES on Computers for Instruction in Higher Education deserves a parallel study for elementary and secondary education. (Some of the questions in that study, that focus on policies and academic requirements suggest some ways to address some of the issues

about the effects of schooling also.) It would be very useful to know not only what devices schools are buying, but also to what uses these devices are being put, how staff is being trained, how courses and budgets are being altered et al.

Another aspect of technology's impact will be changes in the roles of school professionals. Current federal statistics seem to suggest that all teachers are alike; and that they work in classrooms. We expect to see further differentiation among school staff roles, fueled not only by pressures for career ladders and merit pay but also by the introduction of technologies. Already, for example, the "computer teacher" that serves in a "laboratory" as a resource to many other teachers has a very different role from the conventional image of what teachers do. Other new professional roles and titles and circumstances are likely to emerge as schools use television, computers, electronic mail, on-line data bases and laser-disc-based data bases and other new technologies.

Two other dimensions of the introduction of new technologies can be anticipated: more diverse instructional strategies and more diverse student roles, as the new mediated and individualized tools become commonplace.

- The National Assessment of Education Progress (NAEP) is a vital federally-financed program because it provides a continuing measure of some effects of our schooling system. This, and perhaps other "snapshots" by NCES can give a picture of changing student attitudes (that is, attitudes that schools may have a role in shaping) to supplement data about academic learning.

- Four topics about the schooling process are not well captured in the current data program that should be improved in the next decade, as they are likely to be of policy concern:

  - courses available to students;
  - populations served by schools;
  - off-campus learning; and
  - uses of new technologies.

We recommend special attention to these four topics.

New administrative procedures, and both old and new technologies, make it feasible to broaden the menu of courses

that can be taught even in the smallest schools. On the other hand, pressures to get "back to basics" and to shift academic priorities tend to reduce the menu of courses available in larger schools. What to teach, and how to make it available, are constant policy topics at local and state levels. Trend data would be helpful here.

The federal statistics program seems to define public schools in K-12 terms. Yet schools everywhere are looking at pre-school care, after-school care, and many forms of adult education and services. Whom to serve, and how to render services to new populations, are policy issues at local and state levels which NCES may be able to illuminate with trend data.

The issue of on-campus versus off-campus learning suggests several dimensions. Technology makes home-based learning more feasible and school-building-based learning less necessary. One trend is the growing interest by some school districts in uses of broadcast, public and cable television. Another is the often expressed need for school/business collaboration; related is a potential for greater collaboration between schools, libraries, museums and higher education institutions.

In summary, schools are likely to change in several ways during the next decade; the best NCES service would be to capture significant trends in a timely way.

We see a most significant trend in the shift in the public debate from debating the process of education to debating its effects. NCES data should also make the shift to facilitate this trend.

We hope that these comments and recommendations will be helpful to you as you participate in the laudable effort to improve NCES data for practical use in local school districts throughout America.

Very truly yours,

Thomas A. Shannon
Executive Director

TAS/mk

cc: William J. Bennett
Secretary of Education

RESEARCH AND DATA NEEDS FOR SMALL/RURAL SCHOOLS

A Position Paper prepared for the
National Center for Education Statistics

In consideration of NCES's plans for the
Redesign of their Elementary and Secondary
Data Program

by

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June 17, 1985

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RESEARCH AND DATA NEEDS FOR SMALL/RURAL SCHOOLS

by

Bruce Barker

Although discussion of research and development needs for small/rural schools is becoming more prevalent, the state of knowledge and information currently available on rural education remains incomplete and startlingly inadequate. The first National Seminar on Rural Education held in Washington, D. C. in May, 1979 recognized the need to collect, analyze, and compile data pertinent to rural education (Flectcher, 1979/80). Tamblyn (1977) indicated that one of the major tasks in the 1980's for rural education was the need to conduct basic research on small school problems, practices, and unique features. Horn (1981) declared that one of the responsibilities facing universities is to conduct research and collect data on rural schools. And, Nachtigal (1979) specifically stated that descriptive data are needed on the operation of K-12 rural school systems with enrollments of fewer than 300 students, 300-999 students, and 1000-2500 students.

The Problem of Definitions for Rural Education

Lack of a precise definition may be one reason rural education has received little attention in recent years. Rural education has been a difficult entity to define because the word "rural" has different meanings when viewed historically, statistically, or philosophically (Salmon, 1980). Furthermore, the concept of "rural education" varies from state to state and region to region. Both Texas and Oregon, for example, define a small/rural district as

having fewer than 1000 students (Barker, 1985). Since 1970, the U.S. Census Bureau has carefully defined the rural population as consisting of all persons living in places of fewer than 2500 inhabitants or in areas of extended cities with a population density of less than 1000 persons per square mile (U.S. Department of Commerce, 1970). The National Advisory Council on the Education for Disadvantaged Children uses the Census Bureau's definition to state that a rural district is, therefore, one having fewer that 2500 students (Special Report on Rural Education, 1979). Other definitions include those of the American Association of School Administrators which has established a K-12 enrollment of 2000 or less as a small district and the National Association of Secondary School Principals which considers an enrollment of 1000 or less to be a small high school (Jinks, 1984).

Some of these definitions imply that rural America collectively consists of all our society's nonmetropolitan areas. Inference is also made that this portion of our society is basically homogeneous in nature and composition. In reality, rural America is a vast array of diverse nonmetropolitan areas which may be internally more homogeneous that most urban communities, but which differ widely from each other. For example, an island hamlet off the coast of Maine, an Alaskan native village near the Arctic Circle, a coal mining town in West Virginia, a ranching area in Wyoming, an impoverished community in the Mississippi Delta, a ski resort section of Vermont, or a prosperous grain farming region in Iowa have little in common, except that they are all classified by the Census Bureau as rural areas of the United States (Sher, 1977).

The Lack of Attention Given Rural Schools

Federal statistics reveal that 59.5 million Americans live outside designated urban areas of the United States and that rural school students constitute the largest minority public school population in this country (Treadway, 1984; Sher, 1977). Based on the Census Bureau's definition of "rural," nearly two-thirds of the 15,600 operating public school districts located in the United States are in rural areas and one student in every three attends an elementary or secondary school classified as rural (REA News, 1982). Ironically, however, the "lion's share" of attention, research and an over balance of federal and state financial support generally go to large schools in metropolitan areas. Not until late 1983, four years after the establishment of the U. S. Department of Education, did that federal department declare a "Rural Education and Rural Family Education Policy for the 1980's" which stated, "Rural education shall receive an equitable share of the information, services, assistance, and funds available from and through the Department of Education and its programs" (ERIC CRESS, 1983/84). In 1983, the National Center for Education Statistics also agreed, for the first time, to include small and rural schools of under 300 students as a separate category for data collection (REA News, 1983). Up until the time of these two actions, national policy makers and researchers had paid little attention to rural schools.

Rural Education Research and Data Needs

Among the expressed goals of the national Rural Education Association is to encourage ". . . the collection and dissemination of . . . statistical data and other appropriate information relating

to rural education" (REA, 1980). A National Rural Education Research Agenda endorsed by the Rural Education Association calls for research relevant to rural education in nine broad categories (Barker and Stephens, 1985).

1. Rural school effectiveness
2. Staff development and professional support
3. Curriculum and instruction
4. Taxonomy of rural education
5. Federal, State, and local policies impacting rural schools and communities
6. Rural school finance
7. School district governance and organization
8. Assessment of rural school assumptions
9. Role of the school in rural development

These themes may not encompass all of the research needs for small/rural schools, but they do establish the major areas in which research is to be focused. Moreover, data collected in these areas will provide policy makers and rural school practitioners information to knowledgeably affect small/rural schools improvement.

In the redesign of the elementary and secondary data program conducted by the National Center for Education Statistics, the Rural Education Association strongly encourages the inclusion of small/rural schools as a specific category in the collection and reporting of data. In light of the various definitions associated with rural education, it would seem that the collection and reporting of data on the basis of school district enrollment size would be the most utilitarian approach. Rural schools have always been, and will likely continue to be, characterized by smallness. According to Sher (1977), small public schools and small school districts have become increasingly rare in America's metropolitan centers. Urban schools and districts have generally always had larger student bodies than rural ones. With continued political and economic pressure to

centralize schools, the issues of the small public school will become almost exclusively rural, for rural areas will be the only places such public school exist in significant numbers.

In the collection and reporting of education data, the Rural Education Association recommends that NCES, whenever possible, break down the data based on school districts of fewer than 300 students, 300-999 students, 1000-2500 students, and those in excess of 2500 students. Such a classification would more accurately reflect rural, suburban, and urban similarities and differences. In addition, the availability of comparative data at the national level would provide policy analysts, public educators, and others interested in education with valuable information to assess American public education.

Conclusion

It is impossible to treat rural education as one single or common entity. Rural education encompasses everything from a one-room country schoolhouse in northern Vermont to a sparsely populated western school district responsible for education in a several hundred square mile region. It includes districts having solid financial resources and others with very limited funding sources. Some of America's fastest growing districts, as well as those experiencing the most rapid enrollment decline, are in rural areas. Because of this diversity, much of the effort put forth to improve rural schools can best be met at the local level, where area specific problems can be addressed and treated.

It is not expected that the collection and reporting of national data on the basis of public school district enrollment size will solve the many challenges facing rural educators. Such information

will, however, enable local administrators to more knowledgeably assess the operation and management of their own school systems and will provide them with reference information on school systems of similar size. In our nation's quest for excellence in education, the data and information needs for small/rural schools must be included in any collection of statistics conducted by the National Center for Education Statistics.

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SHEEO/NCES COMMUNICATION NETWORK

Suite 310 • 1860 Lincoln Street • Denver, Colorado 80295 • (303) 830-3687

October 1, 1985

Mr. Emerson Elliott
Administrator
National Center for Education
Statistics
Brown Building, Room 606
1200 19th Street, N.W.
Washington, D.C. 20208-1404

Dear Mr. Elliott:

I am pleased to provide you with some ideas on the NCES project to redesign its elementary and secondary education data program. This is an important NCES initiative. We applaud the Center's effort to solicit advice from various persons and associations on how NCES might improve these data. The comments which follow were prepared by the State Higher Education Executive Officers/National Center for Education Statistics Communication Network Advisory Committee. I transmit them to you on behalf of the State Higher Education Executive Officers Association.

Most SHEEO agencies use national postsecondary education statistics available from NCES in a variety of ways. By comparison, their use of national elementary/secondary education statistics has been limited. Historically, this has been so because much of the elementary/secondary data used by the agencies has been obtained from their respective state departments of education. Many agencies have not taken advantage of relating national elementary/secondary data to national postsecondary data. Recently, however, the emphasis upon education reform at all levels within the states has generated the need to address interrelated elementary, secondary and postsecondary issues and problems. There are, therefore, some important general comments we feel need to be considered by NCES as the Center works toward redesigning and improving its national elementary/secondary data collection program.

Many education policy issues in the states and at the national level bridge elementary, secondary and postsecondary education. NCES data collections from all sources and levels of education should be compatible so the totality of the educational enterprise and its continuity can be reflected in the data analysis. We need the capacity to assess changes in the educational process at transitional points along the education

continuum. The same definitions should be applied to NCES student and institution based survey data so students can be tracked from one level of education to the next. Analysts, as a result, should be able to reliably generalize sampled data to the population (i.e. the sampled data from NLS-88 can be generalized for students in the IPEDS universe of institutions). Elementary/secondary data collections need to be compatible and linked to the NCES Integrated Postsecondary Education Data System (IPEDS) surveys to make possible the ability to interrelate the data. By interrelating the data bases, NCES will be able to show more clearly the multi-dimensional character of education, and thereby demonstrate the need to address many educational problems at more than one area of the education spectrum.

It is important that NCES improve upon both what data are being collected, and upon how the data are collected. Thus, another important element of this redesign effort is the use of current technologies for collecting, transmitting, and disseminating the data to be collected. The timeliness, quality and utility of the NCES data for researchers, administrators, state and national policy makers can be improved if the use of technology to collect and disseminate data is an integral part of the total redesign initiative.

Beyond these general comments, there are some specific data elements, and related information that are needed by postsecondary analysts which should be a part of the NCES elementary/secondary education data collection program. The availability of such data will be of assistance to postsecondary education policy planning and development at the state and national levels.

1. Enrollments in public, private and specialized (state schools for the deaf and blind, etc.), high schools, and enrollments in school-sponsored, home-study programs. The enrollment needed annually from the universe of schools include students in:

   a. Grades 7, 8, 9, 10, 11, 12 by sex, age and ethnicity;

   b. College preparatory, vocational and general curricular tracks for twelfth graders by sex and ethnicity;

   c. Joint high school/collegiate level programs;

   d. Third and fourth year English, mathematics, science and foreign language courses for grade levels 11 and 12;

   e. Different kinds of remedial courses and programs at the secondary and postsecondary levels by sex and ethnicity.

2. Number of high school graduates from public, private and specialized high schools. The number of high school diploma recipients need to be available annually from the universe of schools by sex, age and ethnicity.

3. A survey regarding elementary and high school personnel for the purpose of determining:

   a. Analysis of staff turnover in terms of "quit rates";

   b. Percentage of high school teachers teaching out-of-field;

   c. Measures of teacher quality (i.e. experience, degrees held, test scores, self-reported grade point average in college, etc.)

4. Other information to be provided through data analysis (that perhaps can be derived from existing data) include:

   a. The participation rates of students from different types of secondary schools enrolling in different types of postsecondary institutions;

   b. An analysis of the secondary school courses taken by former high school students enrolling in different types of postsecondary education institutions, and the relationship of such course work to previous academic achievement and test scores in elementary schools.

   c. Basic indicators of the progress being made in improving the condition of education at all levels.

5. Analyses of student-based longitudinal studies that need to be continued include:

   a. High school drop-out rates from all kinds of schools, including private and specialized, by grade level, sex and ethnicity;

   b. Average achievement test scores for students by type of high school (public, private, specialized), location of school (rural, suburban, city), curricular track (college preparation, vocational, general), by student sex and ethnicity; and

   c. Intentions of high school seniors regarding work, military, or education upon completion of their secondary schooling with a six-month follow-up to determine the extent intentions are valid predictors of actual decisions made.

School-based survey data, similarly to postsecondary institution-based data, provide essential information for particular purposes. Obviously, NCES should continue to collect such data. In Addition, student-based survey data are becoming increasingly important. Many policy issues related to drop-outs, remediation, and student course work and achievement can only be addressed through the NCES-sponsored, student-based, longitudinal studies. The information gathered through these studies may, in the future, be the most important elementary/secondary education data series NCES sponsors.

At its annual meeting in July 1985, SHEEO adopted several recommendations it received from its SHEEO/NCES Network Representatives following their national meeting in June (see attachment). Several recommendations relate to improving the relevance, technical quality and utility of NCES data programs to better serve education policy makers at all levels. Implementation of these recommendations will improve NCES' elementary/secondary and postsecondary education data collections. Recommendations 1, 5, 6, 14, 15 and 16 should be considered when redesigning NCES' elementary and secondary education data collections.

On behalf of the SHEEO Association, I thank you for this opportunity to provide our thoughts on the elementary/secondary redesign project. Please contact me for further elaboration on these comments if needed.

Sincerely,

John R. Wittstruck, Director
SHEEO/NCES Communication Network

JRW:as

cc: Kenneth Ashworth, SHEEO President
SHEEO/NCES Network Advisory Committee
Leslie J. Silverman, NCES
Richard C. Taeuber, NCES

U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION
Washington, D.C. 20507

Mr. Leslie J. Silverman
Deputy Assistant Administrator
Division of Statistical Services
National Center for Education Statistics
Department of Education
Brown Building #413A
1200 19th Street, N.W.
Washington, D.C.

Dear Mr. Silverman:

The U.S. Equal Employment Opportunity Commission is pleased to participate in the National Center for Education Statistics' effort to re-evaluate and redesign its data collection system. We applaud your long-term plans to improve your responsiveness to the needs of various users by providing "cross-sectional and longitudinal data relevant to policy issues and administrative needs, as well as to measurement of our Nation's education systems."

Our input to the project consists of two parts. First, with regard to the kind of data that NCES might consider collecting, we are providing the following general and specific recommendations whose thrust is toward the increased use of case studies and ethnographic research:

1. Collecting data at elementary and secondary school levels indicating actual enrollees by race and ethnic categories;

2. Developing qualitative indicators of primary and elementary school preparation showing self-perception, motivation to learn, and orientation toward school and the world outside of family and neighborhood;

3. Providing interpretive analyses of Digest of Education Statistics tables and data sets;

4. Collecting data at both elementary and secondary school levels on drop-out rates by race and ethnic categories. Also providing case studies of successful retention programs, incidences of high drop-out rates, and number of drop-outs who return and complete their studies;

5. Ethnographic studies, particularly in urban areas, on how minority students "move through" the system, with emphasis on barriers and "tracking;"

6. Case studies of the correlation between levels of education and employment by race and ethnic group, in terms of income levels, unemployment and underemployment;

7. Collecting data on students "tracked" during elementary and secondary school as enrollees in general education curriculum, vocational education curriculum, or college preparatory curriculum;

8. Case studies of "more effective" and "less effective" school systems and programs;

9. Case studies comparing public and private schools -- in terms of enrollments by race and ethnic group, quality indicators, objectives, value systems, teaching techniques, administration, and school organization.

Second, in response to your invitation to submit papers addressing select education topics, we are including with this letter two separate papers that discuss the relationship between equal employment opportunity and equal educational opportunity. More specifically, the papers address the critical issues of family, education and employment, with particular emphasis on minority communities. These essays, as well as a third paper that will be sent to you next week, serve as the foundations on which the above recommendations rest.

We ask that you review these papers as "drafts" and not consider these as reflective of official Commission policy. Our intention is to provide research papers for the purpose of stimulating public debate on the nexus between employment and education.

For any further information regarding any aspect of our package, please contact the respective authors or Mark Wong at 634-6750.

Sincerely,

J. Paul Royston
Director
Office of Program Research

Enclosures

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

Directorate for Science
and Engineering Education

June 19, 1985

Mr. Leslie J. Silverman
Deputy Assistant Administrator
Division of Statistical Services
National Center for Education Statistics
1200 19th Street, N.W.
Washington, D.C. 20208-1401

Dear Les:

I regret that I was not able to attend the May 28th meeting to discuss the redesign of NCES' elementary and secondary education data program. In my absence, Iris Rotberg represented NSF at that meeting.

In response to your request for papers, NSF is sponsoring two projects at the National Academy of Sciences/National Research Council (NRC) that are of direct relevance to your review. One of these studies represents a year-long effort by the Committee on Indicators of Precollege Science and Mathematics Education, which was charged with proposing a framework for an efficient set of indicators, filling in the framework to the extent possible with existing data, and suggesting data and data analyses that will be needed in the future for a continuing portrayal of the condition of precollege science and mathematics education. NSF is presently supporting a successor committee under the chairmanship of John G. Truxall of the State University at Stony Brook, which is addressing the important goal of developing imaginative new indicators. Jay Noel of NCES has been attending the meetings of the successor committee and has a copy of the initial report.

The second project concerns the supply, demand, and qualifications of teachers of science and mathematics. Under NSF sponsorship, the Committee on National Statistics held a conference on August 9-10, 1984 to identify problems with the available data, or gaps in the data, to discuss problems and possible improvements in the models now used for estimating and projecting supply and demand, and to suggest activities for a follow-on study. Frank Corrigan of NCES has a copy of the conference report and, as you may know, NCES is presently in the process of transferring funds to NSF to support part of a new effort that will be based on recommendations from the August 9-10 conference.

I am enclosing copies of the introductory sections of both of these reports that you may wish to use in addition to this letter, as official submissions for public comment. Of course, the NRC activities as they progress will probably have important implications for the NCES redesign efforts.

In terms of specific comments about NSF's present needs from NCES' elementary and secondary data program, I have the following comments:

1. NCES data on teacher supply and demand and course offerings and enrollment are not broken down in sufficient detail to be useful to NSF for planning purposes. The notable exception is the 1982 transcript data from High School and Beyond, which produced enrollment data on detailed of science courses (such as physics, chemistry, and earth sciences) and mathematics courses (such as algebra I, algebra II, geometry, trigonometry, and calculus).

2. Time series data on course enrollment in science and mathematics disciplines are largely lacking. NCES should have more consistency in the design of surveys, data collection, and analysis. Also, more and better data are needed on the amount of time students spend on homework.

3. The most significant determinant of teacher demand projections are turnover rates (which appear to be age specific). Yet NCES data on teacher turnover rates are several years out of date and even these earlier data are not age specific. Again, NCES projections of teacher demand are not broken down by science and mathematics disciplines.

4. Supply projections are largely dependent on new teacher graduates. NCES uses the questionable practice of projecting new teacher graduates based on estimates of percentages of total bachelors degrees granted and these estimates are aggregated so that data on science and mathematics disciplines are not available.

5. Almost no data are available on the reserve pool of teachers and the number who return to teach.

6. The NCES practice of counting teacher vacancies leaves a lot to be desired in trying to determine the extent of shortages of qualified teachers of science and mathematics. For example, there is evidence that many science and mathematics teachers are teaching out-of-field because of shortages. Also, it is not clear whether a teacher certified in both mathematics and chemistry would be counted as a mathematics or a chemistry teacher, or both.

7. Adequate information is lacking on the qualifications of teachers who are responsible for teaching science and mathematics in high school, middle school, and elementary school. In many instances, certification is not a good proxy for teacher qualifications because of disparate certification practices of states. We also need to have more data on these state certification practices.

8. In terms of curriculum content, periodic surveys should be conducted of use of various science and mathematics textbooks at each grade level. Surveys of textbook use should be followed by content analysis of the most frequently used textbooks.

I appreciate the high degree of cooperation that you and your collegues at NCES have had with NSF in the recent past and I look forward to working with you on these issues in the future.

Sincerely yours,

Dick

Richard Berry
Program Director
Studies and Analyses

Enclosures

cc: W. Gillespie, SEE
I. Rotberg, SEE/OSPA

THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-4000

FORCE MANAGEMENT
AND PERSONNEL
(Military Personnel & Force Management)

1 AUG 1985

Mr. Leslie J. Silverman
National Center for Education Statistics
1200 19th Street, N.W.
Washington, D.C. 20208-1401

Dear Mr. Silverman:

As we discussed at our July 19, 1985 meeting, the Department of Defense would be pleased to participate in the Elementary/Secondary Education Data Program Redesign Project and we have specific data we would like you to consider collecting on our behalf.

Our secondary school data collection request, outlined on the attachment, stems from our need for current, consistent and reliable data in support of military recruiting. Specifically, a key portion of the Recruit Market Network (RMN), a major DoD data base available to recruiters through a nationwide teleprocessing network, includes information about the high school population. Because the high school data for inclusion in the RMN is derived largely from recruiters, private firms, and secondary sources, we would be delighted to replace these sources with your data.

If you have questions about the attachment or plan to host future meetings on this topic, we would appreciate your contacting Zahava D. Doering, Chief, Survey and Market Analysis Division, Defense Manpower Data Center, at 696-5826. Dr. Doering, or members of her staff, will attend relevant meetings and can provide additional information.

Sincerely,

Anita R. Lancaster

Anita R. Lancaster
Assistant Director
Accession Policy

Attachment

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HIGH SCHOOL INFORMATION AND DATA TO SUPPORT MILITARY RECRUITING:

REQUIREMENTS

Background

o The Recruit Market Network (RMN) is a common data base, available to users (on-line) through a teleprocessing network, established to support recruiting efforts in the Military Services.

o A key portion of the RMN is devoted to information about the nation's high school population, organized in ways to aid decision makers in allocating their resources.

o The cataloguing, tabulating and associated problems of determining school locations, current enrollment characteristics, and public and private school inventories has remained an on-going problems for recruiters, managers, and DoD officials.

o Data currently available from the National Center for Education Statistics (NCES) does not provide the required detailed data.

Objective

o Provide the recruiting community, through the RMN, with a reliable, up-to-date, efficient, data base containing information on the nation's high schools.

o Eliminate the need to utilize recruiters, private firms, and secondary data sources for this information.

Requirements (each school)

o The RMN requires a data file with a record for every high school which provides the following information:

- Type of School

  -- Public
  -- Catholic
  -- Private (Non-Catholic)
  -- Vocational

- School Location

  -- City
  -- County
  -- State
  -- Zip-Code
  -- School District

- Senior Class enrollment counts, by sex and race/ethnic
- Junior Class enrollment counts, by sex and race/ethnic
- Previous Year's graduates counts, by sex and race/ethnic
- Percentage attending college (for previous years' graduates)

o These data elements are needed on an annual basis